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AUTHOR McCorkle, Sarapage; Meszaros, Bonnie T.; Morton, John S.; Schug, Mark C.; Suiter, Mary C.

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ABSTRACT

This booklet was developed from a 1996 grant program for international education exchange. U.S. curriculum writers worked with writers in partner countries to design training and create a handbook for curriculum development. The "Train the Writers" program was piloted with 14 educators from 7 countries, and this publication, "Connecting the Pieces: Building a Better Economics Lesson," serves as the workshop text. Teachers and students from Estonia, Romania, and Ukraine worked with the U.S. team to develop their instructional writing skills. This handbook is based on an understanding of the economic content, a mastery of classroom instructional techniques, knowledge of underlying pedagogical and developmental learning issues, and ability to shape these into a meaningful sequence so that other teachers can follow them. Chapter titles include: (1) "What is K-12 Economics?"; (2) "Economics Across the Curriculum"; (3) "Thinking Skills, Learning Skills, and More"; (4) "Models for Active Teaching and Learning"; (5) "Determining What Students Have Learned"; (6) "Generating Great Teaching Ideas"; (7) "Lesson Writing Basics"; and (8) "Flight Testing Lessons." Appendices contain the voluntary national content standards in economics and Content Standard 3 with Benchmarks. Contains 21 references. (EH)

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Connecting the Pieces:

Building a Better Economics Lesson

SO 029 505

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business, and labor

Connecting the Pieces

Building a Better Economics Lesson

EconomicsAmerica

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Economic Education**

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Authors

Sarapage McCorkle

University of Missouri-St. Louis
St. Louis, Missouri

Bonnie T. Meszaros

University of Delaware
Newark, Delaware

John S. Morton

Collegiate School
Richmond, Virginia

Mark C. Schug

University of Wisconsin, Milwaukee
Milwaukee, Wisconsin

Mary C. Suiter

University of Missouri-St. Louis
St. Louis, Missouri

Editor

Richard D. Western

University of Wisconsin-Milwaukee
Milwaukee, Wisconsin

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FOREWORD

Publications of the National Council on Economic Education (NCEE) have been enthusiastically received by educators from a wide range of countries, including Australia, Germany, Korea, Kyrgyzstan, and Ukraine. In particular, our active-learning approach to instruction appeals to teachers worldwide. Although the vast majority of these teachers from other countries grew up in traditional classrooms with lectures and recitations, they welcome materials showing them how to expand their pool of instructional techniques.

NCEE's international program has grown dramatically in recent years, with high levels of activity in the former Soviet Union, eastern and central Europe, and the Baltic states. As part of this expansion many of our materials have been translated into other languages for workshops and seminars we have conducted. Such translations solve the immediate need for high-quality teaching materials, but they do not address the long-term need for materials developed by native speakers of a language and based on the history, culture, and economic institutions of a country. Since 1992 many social science teachers in eastern Europe have written their own textbooks, but many educational reformers are recognizing the need for another kind of classroom resource — *instructional strategies guides for teachers*, developed by Russians for Russia's teachers or by Latvians for Latvia's teachers.

In 1995 and 1996 the National Council was awarded two grants from the Office of Educational Research and Improvement, U.S. Department of Education, for international education exchange. As an important part of the 1996 program, we recruited several of the finest writers of economic education materials in the U.S. to design training and create a handbook that, together, would be used to train writers from our partner countries. The *Train the Writers* program was piloted with 14 educators from 7 countries, and this publication, *Connecting the Pieces: Building a Better Economics Lesson*, serves as the workshop "text."

Teachers and students from Estonia and Romania and Ukraine are not the only ones who can benefit from this publication. A very important goal of *Connecting the Pieces* is to help U.S. educators develop their instructional writing skills. If you have tried your hand at writing lessons, you already know that the task is surprisingly

difficult. Not only must you have an understanding of the economic content, a mastery of classroom instructional techniques, and knowledge of underlying pedagogical and developmental learning issues, but you have to be able to shape them into a meaningful sequence in a way that other teachers can follow. And as if that were not enough, it helps to be creative, too!

If you have read this far, my guess is that you are not daunted by the challenge of writing instructional materials. I hope this handbook is a helpful tool in your efforts to translate the gift of inspired teaching into written lessons that teachers throughout the nation — and perhaps across the ocean as well — can use.

Patricia K. Elder

Vice President, **EconomicsInternational**

Chapter 1

WHAT IS K-12 ECONOMICS?

Increasingly, adults must make economic decisions affecting themselves, their families, the community, and even the nation. When they face economic issues, they are likely to find these issues complex and confusing, especially if they lack economic knowledge and the ability to apply economic reasoning to economic problems.

An understanding of economics helps people make sense of their world. It helps them become smarter consumers and better decision makers. It helps prepare students for their adult roles as producers, problem solvers, citizens, voters, parents, and global participants as they enter the 21st century. Without an economic perspective, students will find it difficult to make sense of the forces that affect them and to fulfill the many roles they will assume as adults.

Because students live in an economic world and make economic decisions daily, they bring economic perceptions into the classroom. Some of their perceptions are correct; some are misconceptions. Despite this, schools often have omitted economics from the curriculum, have included it only at a cursory level, or have relegated it to inclusion in an elective course at the secondary school level. Too often, the teaching of economics has focused on insignificant content approached with incorrect assumptions.

Content Standards in Economics

To help teachers and school districts determine the economics every student ought to know and when it should be taught, the National Council on Economic Education (NCEE) formed a coalition of organizations interested in economic education. In 1995, representatives from the coalition created a writing committee that developed a set of world-class standards in economics. These voluntary national standards, based on principles of central importance in economics, constitute a proposal about what it is that all students ought to know when leaving high school.

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The *Voluntary National Content Standards in Economics* state that both economic skills and content are crucial to understanding economics. The overall rationale for the standards specifies the key skills. These include an ability to (1) identify economic problems, alternatives, benefits, and costs; (2) analyze the incentives at work in an economic situation; (3) examine the consequences of changes in economic conditions and public policies; (4) collect and organize economic evidence; and (5) compare benefits with costs.

By the time they graduate from high school, students also need to possess several kinds of economic knowledge. They should be able to reason logically in thinking about key economic issues. They should also know a limited number of key facts, such as the size of the economy and the current rates of unemployment, inflation, and interest. Finally, students should understand that economists hold differing views on some economic issues, such as the role of government in a market economy and how and when the federal government should try to fight unemployment and inflation. Nevertheless, there is widespread agreement among economists on many issues and in their basic methods of analysis (National Council on Economic Education, 1997).

To help students gain this knowledge and these skills, school curriculums must focus on key economic principles. These principles are identified in the 20 broad content standards of the *Voluntary National Content Standards in Economics*. (See Appendix A on page 89.) Content standards spell out what an economically literate student should know and be able to do upon leaving high school. They describe the knowledge and skills that are to be taught and learned by students. Knowledge includes the most important and enduring ideas, concepts, and issues of the discipline. The skills are defined to include the ways of thinking, working, communicating, reasoning, and investigating that are germane to economics.

Economic content standards have two parts. The first part consists of what the experts think is irreducible — the essential core of economics that students need to know. The second part anticipates questions students might ask about why this

economics content is important to know. For example, the first part of Standard 3 states:

Students will understand that different methods can be used to allocate goods and services. People, acting individually or collectively through government, must choose which methods to use to allocate different kinds of goods and services.

The second part continues:

Students will be able to use this knowledge to evaluate different methods of allocating goods and services based on the benefits and the costs of each method.

Each of the 20 content standards is broken down into benchmarks for grades 4, 8, and 12. Benchmarks also have two components. Each benchmark identifies what students are expected to know upon completion of each of the three grade levels; then each gives an example of how students might use this knowledge as they move toward the attainment of a broad content standard. For example, Standard 3, Grade 4, Benchmark 2 states:

At the completion of Grade 4, students will know that there are different ways to distribute goods and services (by prices, command, majority rule, contests, force, first-come/first-served, sharing equally, lottery, personal characteristics, and others), and there are advantages and disadvantages to each.

The second part of the benchmark continues:

At the completion of Grade 4, students will use this knowledge to compare the advantages and disadvantages of different methods of allocating various kinds of goods and services, such as cookies, houses, student time on the playground equipment at recess, elective class offices, military service in times of war or peace, and athletic championships.

Benchmarks become increasingly complex from grades 4 to 12, building upon the knowledge that students have gained at each previous grade level. For Standard 3, Grade 4, Benchmark 2, students compare the advantages and disadvantages of different allocation methods, using examples familiar to students at that age level. By the completion of Grade 8, Benchmark 2, students are expected to recognize the essential differences between a market economy and a command economy in respect to allocation of resources and to use this knowledge

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to compare methods for allocating work responsibilities in the home and in business activity. They also are asked to go one step further and analyze allocation methods in different economic systems, using current and historical examples. By the completion of Grade 12, Benchmark 1, students must not only analyze different economic systems used in different countries; they also must select the one they think provides for the most effective allocation of resources and explain why. (See Appendix B on page 93.)

As the economic content standards were written, they were judged against a set of criteria. To be acceptable, proposed economic standards had to be parsimonious and yet summarize the most important knowledge and skills of the discipline. In addition, the standards needed to be challenging and, with sustained effort, attainable by all students. What were the essentials for every student, not merely the college bound or advanced placement student, to know? In answering this question, hard choices were made. As a result, some economic concepts, such as *diminishing marginal returns*, *elasticity*, *absolute advantage*, and *income effects*, were omitted from the standards.

The content standards had to be sufficiently clear so that parents, teachers, students, and the lay public could understand them. As a result, some technical language familiar to economists and economic educators does not appear in the standards. However, crucial economic concepts and terms are imbedded in the benchmarks. For example, Standard 1 states that productive resources are limited. Therefore, people cannot have all the goods and services they want; as a result, they must choose some things and give up others. The economic concepts of *scarcity* and *opportunity cost* are not mentioned explicitly in the standard itself, but they do appear in the benchmarks (Siegfried and Meszaros, 1997).

Each proposed standard had to be accurately stated and reflect the best scholarship within the discipline. Therefore, the writing committee was selected to include economists, economic educators, and teachers with many years of experience. To insure feedback from a broad base of constituents, drafts of the content standards were sent out on several occasions to economists, economic

educators, teachers, members of the business community, and state social studies supervisors and curriculum directors. In addition, a panel of noted economists reviewed the standards and provided many thoughtful suggestions. Comments from all the groups were considered when the writing committee completed the final standards document.

The standards had to be sufficiently specific so that their attainment could be measured. Content standards do not spell out how to judge whether a content standard has been met or to what level it has been met. The criteria for determining how good is good enough are specified in performance-assessment standards. These standards specify the evidence required to demonstrate that a content standard has been attained and the quality of the student performance that will be acceptable. Performance-assessment standards have not been written for economics. However, the benchmarks within each economic content standard do provide examples of evidence that might be required of students to demonstrate their achievement of a benchmark.

Finally, the standards had to be useful, focusing on what is needed for citizenship, employment, and lifelong learning. The NCEE's desired outcomes from teaching economics in grades K-12 are to prepare students for their roles as workers, decision makers, voters, and citizens in a global economy. In keeping with these outcomes, the economic standards identify the knowledge and skills students need to function effectively in these roles. Economics has an advantage over other social science disciplines in that the NCEE and its affiliated network of councils and centers has a long track record of developing instructional materials for students in grades K-12. These materials are correlated with the benchmarks in the standards document.

Voluntary national standards in economics are not intended to serve as a mandate for states or local school districts. They are designed to offer guidance to states, which have the responsibility of adopting economic standards; to local school districts responsible for implementing them; and to teachers and curriculum supervisors charged with teaching students to apply economic knowledge and

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skills when solving real-world problems. The standards will help these groups to select important economic content and to provide rich and accurate coverage at appropriate grade levels. In the end, when they are implemented, the standards will provide students with the knowledge and skills they need to continue learning beyond high school and to compete with graduates worldwide in the global marketplace.

Chapter 2

ECONOMICS ACROSS THE CURRICULUM

Traditionally, the school curriculum is separated into disciplines or school subjects that are taught one at a time. The major categories in the elementary grades are mathematics, science, language arts, and social studies. In middle schools and high schools, the curriculum becomes even more differentiated, including courses in civics, history, economics, psychology, sociology, chemistry, physics, and biology. Links between and among the disciplines are seldom explicitly defined. In middle schools and high schools, the courses, teachers, and locations all change. These implicit clues suggest to students that there are no connections to be made among the disciplines.

There are other ways to organize the school curriculum. In recent years, the idea of an integrated curriculum has been revisited. It is an idea that economics lesson writers should put to use. In order to do that, however, lesson writers must understand integration.

The term "integration" is used to describe different ideas. For some educators, integration involves a sequenced approach (Fogarty, 1991). This means that class schedules are aligned so that similar content and skills may be taught in different subject areas at the same time. For example, when students study the United States Civil War in history, they may read *Killer Angels*, by Michael Shaara, in literature. Another approach is to teach a common skill or concept in different subject areas at the same time. For example, data collection, graphing, and interpreting charts and tables can be taught in mathematics, science, and social studies at the same time. Another approach to integration is thematic. This involves learning through daily activities unified by a theme. The theme is linked to various subject areas so that related concepts, topics, and ideas are taught. For the purposes of this handbook, integration is viewed in a broad sense as the process of relating content, skills, and applications within and across content areas in a way that makes sense to students (Heath, 1989).

Benefits of Integration

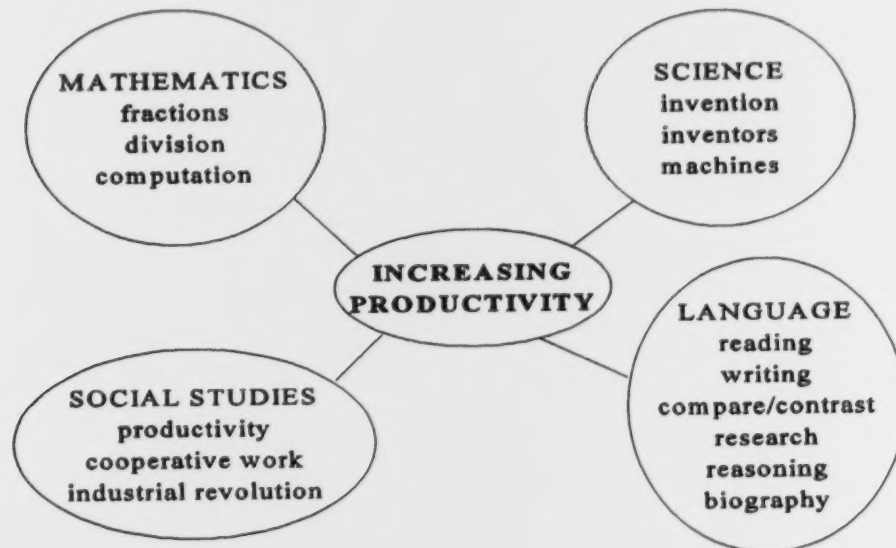
The advantages of integration are many. Curriculum integration can enhance learning. Often, key elements of a discipline are learned more effectively in relation to those of another discipline. Additionally, an integrated approach addresses concerns about the relevance of curriculum and concept fragmentation in the curriculum (Torp, 1994).

Economics and Integration

Economics can be taught as a separate high school course; economic content can be taught in isolation in elementary and middle schools; or economics can be integrated. In elementary and middle schools, and in high schools that do not require economics for graduation, economics is often taught through integration. Integrating economics into the curriculum facilitates the teaching of economics without the addition of a new or separate course. An additional benefit of integration is that all or most educators in the school or school system can be viewed as economics teachers (Brenneke and Soper, 1987).

Economics can be integrated into the curriculum in several ways. The lesson writer can develop lessons that teach economics within another discipline. For example, supply and demand can be taught in mathematics while students learn and apply graphing skills. Using a different approach, the lesson writer can develop lessons that call for students to use economic content and economic reasoning to solve problems or understand the causes of events both past and present. This might work best in history, civics, or government courses. Finally, the lesson writer can employ a webbing technique in lesson development. This is more complex because the lesson writer must select a theme and show how ideas may be taught within the context of the theme, implicitly and explicitly addressing connections among the content areas. This approach may employ reading, writing, mathematics, research, reasoning, and problem-solving skills (Fogarty, 1991). A curriculum web or map (see Figure 2.1) is helpful when considering this type of lesson development.

Figure 2.1



In secondary schools, integration implies teaching economics as part of another course — perhaps U.S. history, civics, geography, government, or current events. Employing economic reasoning along with the tools of a different discipline helps students answer the “why” questions that are difficult to answer otherwise. Inquiry of this sort would involve use of two basic components of economic reasoning. The first is a set of basic assumptions about human behavior. The second is a deductive reasoning process that helps students use the assumptions to make sense out of behavior that may, at first, not appear to make sense (Wentworth, 1987). For example, knowledge of economic incentives, opportunity cost, and tariffs, together with application of economic reasoning, helps students analyze more fully the causes of the United States Civil War.

The elementary- and middle-school curriculums are crowded. Integrating economics into social studies, language arts, mathematics, science, and other subject areas eases pressure on the crowded curriculum. Moreover the study of economics blends well into other subject areas. An eighth-grade teacher who

wishes to enhance students' study of the depression in the United States may assign the novel, *No Promises in the Wind*, by Irene Hunt. However, the teacher might find that students have difficulty relating to the problems of a young man and his family during the depression in the United States. A discussion of the economic incentives facing the main character, his decision-making skills, and the opportunity costs he incurred may help students make connections with their life experiences and improve their economic understanding, empathy for the character, and understanding of the depression.

Studying economics gives students an opportunity to read, write, and think about important content. For example, if their community is asked to consider a school tax increase, students can use research and questioning skills and analyze maps, charts, and tables to gather information. Then they can apply economic reasoning by determining two or more possible decision alternatives, weighing the expected costs and benefits of each alternative, identifying trade-offs, making a decision, and predicting the immediate and long-run consequences of the decision. Once the decision is made, students can write a persuasive letter or newspaper article, or deliver a speech, that supports their decision. Integrating economics into the curriculum in these ways helps students make connections between the subject material and their lives.

Concepts Taught in Isolation versus the Integrated Curriculum

A third-grade teacher might teach about human resources merely by defining and providing examples of human resources. This restricted approach deprives students of the opportunity they need to reach a deeper understanding of the concept. When the concept is well-integrated across the curriculum, however, students are provided with many examples of human resources in a variety of contexts, and they begin to see themselves as human resources.

There are many possibilities for teaching about human resources across the curriculum. Students can identify the human resources they read about and see pictured in their social studies textbooks. In language arts, they can keep a human resource journal, listing the people they see working each day and describing the

work these people do. Word problems in mathematics class can focus on people working. Books such as *Chicken Sunday*, by Patricia Polacco, *A Chair for My Mother*, by Vera B. Williams, and *The Terrible Thing that Happened at Our House*, by Marge Blaine, are rich stories that may prompt interesting discussion. The discussion can be enhanced by including a discussion of human resources as that topic arises in the stories. If students are writing poems, they can write about human resources. If they are learning mapping skills, they can create a human resource map for their school building. Students can also begin to see themselves as human resources by identifying examples of work they do at home and at school. If an art project involves producing puppets, students can produce human resource puppets and then use their puppets to produce a play. All these ideas may enrich the curriculum through integration and help students connect the concept of *human resources* to real-world experiences.

Topics such as increasing productivity and investment in capital resources can be taught in an economics unit. Unless the economics unit is richly developed, students may be left with a fragmented view. Important connections with history, current events, mathematics, science, and literature may be missed. As a result, students may not learn as well because they are unable to connect their new knowledge to existing knowledge.

The same topics can be taught across the curriculum by emphasizing them within several disciplines. Using this integrated approach provides many more opportunities for students to determine where and how new content connects to what they already know.

For example, as fifth-grade students study the industrial revolution in U. S. history, they can read biographies about inventors, such as *Shoes for Everyone: The Story of Jan Matzeliger*, by Barbara Mitchell. During the industrial revolution, Matzeliger invented a machine that revolutionized shoe production. The Matzeliger story explains the increase in shoe production that occurred as a result of his invention. Discussion of the story would provide an opportunity to

introduce the economic concepts of *entrepreneurial ability*, *investment in capital resources*, and *increasing productivity* in addition to the traditional historical discussion of inventors and biographies. When teaching mathematics lessons about division and fractions, teachers could introduce the concept of *productivity* in application exercises by using a lesson such as "Widget Production" from the *5-6 Teaching Strategies Guide* published by the National Council on Economic Education. Instruction about increasing productivity and investment in capital resources can also be integrated into science with the study of technology, inventions, and inventors. Students could participate in an "invent a capital resource" activity and be asked to predict how their capital resource would increase productivity. Students could research other inventors, their inventions, and the impact these inventions had on productivity, and they could write reports that include tables and charts. The research, writing, editing, and development of tables, charts, or graphs could be done using the computer as a capital resource. Students could relate the increases in productivity that occur with the use of a computer and explain how their lives as students would change if computers did not exist.

Conclusion

There are a variety of ways in which economics can be integrated in the school curriculum. Faced with a crowded school curriculum and concerns about the relevance and fragmentation of curriculum, it is important for lesson developers to consider ways in which their lessons may be integrated. Offering lessons that connect with mathematics, science, language arts, geography, or history helps teachers see the relevance of economics and encourages them to teach economics in their classrooms.

Chapter 3

THINKING SKILLS, LEARNING SKILLS, AND MORE

There are so many issues that could be studied in economics that the big decision for the lesson writer is what to emphasize. Lessons should draw upon, and highlight, the essence of economics — the essence, not every detail. In this matter, economists are not always good models. Even though they deal with the science of scarcity, they often fail to practice the virtue of restraint when planning their lessons. In an essay entitled “Teaching More with Less,” Noel McInnis (1971) states :

Survey courses in almost all disciplines are becoming increasingly impractical because of their compulsive attempt to cover all relevant information. They could be made highly practical once again — or perhaps for the first time — if they were organized to convey the five or six most fundamental organizing and conceptual principles of the discipline, using only the most immediately relevant information to bring the principles to life.

Let's take up the McInnis challenge. What is it that makes economics unique? How can the economic perspective provide insights into the buzzing confusion of human behavior in a world of different values, cultures, resources, and political and economic systems? First, economics is concerned with human behavior, not merely with money. Almost every aspect of human behavior can be analyzed using an economic approach. Second, economics is an approach, not a definite set of conclusions. According to John Maynard Keynes,

The Theory of Economics does not furnish a body of settled conclusions immediately applicable to policy. It is a method rather than a doctrine, an apparatus of the mind, a technique of thinking which helps its possessor to draw correct conclusions (quoted in Heyne, 1994, p. 4).

Keynes does not exactly tell us what this “apparatus of the mind” is. But in order to meet the McInnis challenge we will take the next step and try to identify the essence of economics. We have not reduced the discipline to five or six principles, but our nine principles are a good start. Table 3.1 lists these nine principles.

Table 3.1

The Economic Way of Thinking

1. Everything has a cost.
2. People choose for good reasons.
3. Incentives matter.
4. People create economic systems to influence choices and incentives.
5. People gain from voluntary trade.
6. Economic thinking is marginal thinking.
7. The price of a good or service is affected by people's choices.
8. Economic actions create secondary effects.
9. The test of a theory is its ability to predict.

Source: *Advanced Placement Economics Teacher Resource Manual* (New York: National Council on Economic Education, 1996), pp. 11-12.

1. Everything has a cost. This principle expresses the basic idea that “there is no such thing as a free lunch,” meaning that every action costs someone time, effort, or a lost opportunity to do something else. Opportunity cost is the value of the next-best alternative, or what someone gives up by choosing one alternative over another. The economic perspective sometimes is unpopular because potential benefits are more fun to discuss than potential costs. Many a party has been spoiled by people preoccupied with the economic perspective. The world as seen by economists can seem to be a world of competing sorrows, with more trade-offs than solutions.

2. People choose for good reasons. This is the most important principle of economic thinking. People always face choices, and they try to choose the most advantageous combination of costs and benefits. This is self-interested and not selfish behavior. In his Nobel lecture, Gary Becker (1993) makes the case this way :

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Unlike Marxian analysis, the economic approach I refer to does not assume that individuals are motivated solely by selfishness or material gain. It is a method of analysis, not an assumption about particular motivations. Along with others, I have tried to pry economists away from narrow assumptions about self-interest. Behavior is driven by a much richer set of values and preferences. The analysis assumes that individuals maximize welfare as they conceive it, whether they be selfish, altruistic, loyal, spiteful, or masochistic. Their behavior is forward looking, and it is also assumed to be consistent over time.

The key to this analysis is that only individuals choose, and those choices drive society. According to Paul Heyne (1994, p.8), "all social phenomena emerge from the choices individuals make in response to expected benefits and costs to themselves."

3. Incentives matter. Economics is really about incentives. Supply and demand analysis is about incentives. Price controls are about incentives. Profit and the theory of the firm are about incentives. Government decisions are about incentives. According to Steven Landsburg (1993, p.3),

Most of economics can be summarized in four words:
"People respond to incentives." The rest is commentary.

"People respond to incentives" sounds innocuous enough, and almost everyone will admit its validity as a general principle. What distinguishes the economist is his insistence on taking the principle seriously at all times.

4. People create economic systems to influence choices and incentives. Cooperation among people is governed by written and unwritten rules which are the core of an economic system. As rules change, incentives and behavior change. These rules are the rules of the game. One problem in the former Soviet Union and in Eastern Europe is that an old set of rules has broken down, but it has not been replaced by a new set of rules. Centrally planned economies have been dismantled, but true decentralized market-based systems have not replaced them. For example, an important element of a market economy is private

property. People work harder and use resources more wisely when they own property. Private property creates a whole structure of incentives, but ownership rights cannot be created and preserved overnight.

5. People gain from voluntary trade. People trade when they believe the trade makes them better off. When two people trade voluntarily, they each give up something they value for something else they want. The trade is made when both parties think that the benefits of the trade will be greater than the costs.

It is people, not countries, that trade. International trade policy is hotly debated, but the logic of individual trades rarely is disputed. Self-sufficiency is the road to poverty. Everyone specializes and trades some of his or her labor for a vast array of goods and services. This system of specialization and exchange makes people better off. Any effective economic system must encourage specialization and exchange.

6. Economic thinking is marginal thinking. Marginal choices involve the effects of additions and subtractions from current conditions. "Marginal" means extra or additional. When people maximize their well-being, they do so by equating their marginal costs with marginal benefits. All decisions are made at the margin. Businesses maximize profits where marginal cost equals marginal revenue. Consumers maximize satisfaction of wants where the marginal cost of consuming one more good equals the marginal benefit of consuming one more good.

Marginal analysis contrasts with attention to past costs and benefits. Past costs — the dollars you spent yesterday — are sunk, and they are irrelevant to decision making. If you pay \$6 to see a movie, that \$6 is a sunk cost. If the movie looks bad, you compare the cost in time of seeing the rest of the movie with the benefit of seeing the rest of the movie. Unless you can get your \$6 back, that expenditure is sunk and not to be considered when you make your decision.

7. The price of a good or service is affected by people's choices. Goods and services do not have intrinsic value; their value is determined by the preferences of buyers and sellers. The value of a good or service in a market

economy is determined by supply and demand. Labor and materials are costs of production, and these costs contribute to the price of goods and services. No supplier would willingly produce something that could not be sold for more than its cost to produce. However, consumers are equally important in a market economy. Just as producers want to sell at the highest price, consumers want to buy at the lowest price. The actual price is determined through the interaction of buyers and sellers. So if we were to ask several people how much a ticket for tonight's performance of the Kirov Ballet is worth, we would get very different answers. The value of a Kirov Ballet ticket depends on many factors including the preferences of consumers.

8. Economic actions create secondary effects. Good economics involves analyzing secondary effects. Frederic Bastiat, a nineteenth-century economist, stated that "the difference between a good and a bad economist is that the bad economist considers only the immediate, visible effects whereas the good economist is also aware of the secondary effects, effects that are indirectly related to the initial policy and whose influence might only be seen or felt with the passage of time" (quoted in Gwartney and Stroup, 1992, p. 11). In this respect an economic system resembles an ecological system. One action may create several unintended consequences. For example, rent controls make apartments more affordable to some consumers, but those same controls make it less profitable to build and maintain rental housing. The secondary effect is thus a shortage of apartments and houses to rent. Higher taxes provide more revenue for government, but they also create negative incentives to work, save, and invest. A wise policy maker considers both initial and secondary effects.

9. The test of a theory is its ability to predict. Students will discuss dozens of theories in an economics course. Nothing is good in theory but bad in practice. A good economic theory does simplify things, but it is useful only if it predicts the consequences of economic actions. It is difficult to show causal relationships without guidance from theory. According to Paul Heyne (1994, p. 13), "those

who try to reason about complex economic interrelationships without theory usually manage only to reason with very poor theory.”

Ours Is to Reason Why

Now we will put on our economic reasoning caps and find out if we have caught onto the economic way of thinking. Respond to each statement in Table 3.2 with true or false. Give a reason for each answer.

Table 3.2

Test of Economic Reasoning

1. The best things in life are free.
2. Anything worth doing is worth doing well.
3. Life is priceless.
4. The purpose of economic activity is to improve the well-being of some people at the expense of others.
5. Economic theory is not very useful because human behavior is not predictable.

Let's see how you have done. This is a trick quiz. Each statement represents a fundamental misconception in economic thinking. We will examine these misconceptions.

1. The best things in life are free. This statement invites discussion of two important concepts. First, hardly anything is free. Because resources are scarce and wants are unlimited, we have to make decisions all the time about how to use these scarce resources. If we choose one alternative, we give up another — necessarily. The opportunity cost of choosing one alternative is giving up the next best alternative. This is why economists claim, “There is no such thing as a free lunch.”

Second, statement 1 also should drive home the point that economics involves study of human behavior, not merely study of such traditional economic topics as taxes, investment, business, trade, monetary policy, and fiscal policy. For example,

a student may claim that the best things in life are friendship, love, or family, and that these things are free. Yet love, friendship, and devotion to family all involve opportunity costs. Time spent in family activities could be spent in other ways.

2. Anything worth doing is worth doing well. This statement glosses over the necessity for choices. Nobel laureate James Buchanan suggests that an economist can be distinguished from a non-economist by his or her reaction to statement 2. Because resources are scarce and all choices involve costs, we cannot do everything well. If statement 2 were true, we would concentrate only on one task. But in many cases, the additional or marginal cost involved in further improving the quality of work exceeds the additional or marginal benefits. Do students ever not study for a test as hard as they could? Do teachers ever not prepare for class as well as they could? Economists believe that rational, satisfaction-maximizing individuals do something until the extra or marginal benefit of the activity equals the extra or marginal cost of the activity.

3. Life is priceless. This is the most controversial statement listed here. The following discussion of it is not meant to minimize the value of life. However, the world of trade-offs is so complex that in some cases we even use life as an opportunity cost to obtain other benefits. If this were not true, nations would not fight wars and people would never enter dangerous occupations. On a less dramatic level, the perceived benefits of smoking, drinking, hang gliding, and fast driving confront one with the risk of an increased probability of death.

4. The purpose of economic activity is to improve the well-being of some people at the expense of others. This statement illustrates a widely misunderstood economic concept. When people trade with each other, they anticipate that they will be better off because of the trade. This is because both people believe they can improve their circumstances by trading something of lesser value for something of greater value. Laws that limit trade hurt people and nations. Economic activity results in a win-win situation. Economic activity is not a zero-sum game.

5. Economic theory is not very useful because human behavior is not predictable. But economics is a behavioral science, and good economic theory does allow us to predict the results of human actions. Economic theory explains the mysteries of human behavior. "Here is what I now think economics is about," says Steven Landsburg. "First, it is about observing the world with genuine curiosity and admitting that it is full of mysteries. Second, it is about trying to solve those mysteries in ways that are consistent with the general proposition that human behavior is usually designed to serve a purpose" (Landsburg, 1993, p. vii). Keep thinking about how economics provides insights into human behavior when choosing and writing your lessons.

Critical Thinking

An important goal of education in a democracy is to develop citizens who can analyze problems, think carefully about what they read and hear, and make decisions based on their analyses. Most experts suggest that this type of thinking — critical thinking — is a skill that must be taught, applied, and practiced. Sometimes teachers use lessons specifically designed to teach critical thinking but unrelated to a particular discipline. However, a more powerful approach is to teach critical thinking as it is informed by knowledge from academic disciplines, in the course of regular classroom instruction. For this reason, it is important for lesson writers in economics to incorporate the development and application of critical thinking skills.

Experts are unable to agree about what constitutes critical thinking. Some equate critical thinking with logical reasoning ability. Others equate critical thinking with those skills represented by the top three levels of Bloom's taxonomy: analysis, synthesis, and evaluation (Bloom et al., 1956). These levels of Bloom's taxonomy involve raising questions, breaking a complex idea into components, drawing on prior knowledge, translating complicated ideas into examples, and generating hypotheses. Still others have expanded on the list of skills needed for critical thinking. For example, Kneedler (1985) provides the following list: identifying problems; comparing similarities and differences; determining relevant

information; formulating appropriate questions; distinguishing among fact, opinion, and reasoned judgment; checking consistency, identifying unstated assumptions, recognizing stereotypes and cliches; recognizing bias, emotional factors, and propaganda; recognizing different value systems and ideologies; recognizing the adequacy of data; and predicting probable consequences. Other lists emphasize analyzing for bias, attributing cause and effect, classifying, comparing, contrasting, decision making, drawing conclusions, evaluating, prioritizing, sequencing, and solving analogies.

All these efforts to describe critical thinking share the idea that critical thinking involves more than the recall of basic knowledge or disparate bits of information. Rather, the descriptions suggest a sophisticated and systematic use of knowledge and skills to solve problems, make decisions, analyze complex issues, and consider carefully all that one hears, reads, and sees.

An economics lesson or set of lessons will be most useful for the teacher when the writer looks beyond basic economic content and incorporates material and activities that require critical thinking. The discipline of economics involves the study of human behavior. To think like an economist, one must employ critical-thinking skills. Because of the broad scope of economics, teachers may work with a rich variety of personal decisions, group decisions, current events, past events, policies, and problems as they plan instruction.

The range of possibilities is suggested by the nine points outlined in Table 3.1, **The Economic Way of Thinking**. Weighing costs and benefits of alternative actions for individuals or governments, identifying the real cost of personal and policy decisions, identifying economic incentives and analyzing how people respond, explaining how written and unwritten rules change incentives and, therefore, people's behaviors — all require critical thinking. Economic thinking necessitates the identification of unstated assumptions and biased thinking, determination of relevant information, analysis of data, understanding of causal relationships, evaluation, and prediction.

THINKING SKILLS, LEARNING SKILLS, AND MORE

In an economics lesson for elementary grades, students can employ critical thinking skills by solving a problem. For example, primary level students can be given the problem of selecting a pet for the classroom. They first must state the alternatives available. Then they should identify criteria that are important in selecting the pet and use the criteria to determine which pet provides the greatest benefits relative to the costs. Finally, they must select a pet for the classroom. In a middle school economics lesson, students can employ critical thinking skills in studying the United States Constitution. They can take the view of an economist and analyze the economic powers granted by the constitution, formulate questions about the impact of these economic powers on the development of the American economy, and predict how changes in constitutional rules would affect the economy.

For an example of a high school economics lesson that integrates critical thinking, consider once again a plan to establish rent controls. Students of economics must consider the costs and benefits of such a policy. To do so they must draw on prior knowledge. They must ascertain how this change in the rules will change incentives for consumers and producers. Then they must analyze how consumers and producers will respond to the new incentives. The economics student must consider relevant data and eliminate any propaganda or biased thinking. Finally, armed with sound economic analysis, the students can predict a shortage of apartments and houses to rent.

Critical thinking and economic analysis go hand-in-hand. As mentioned earlier in the chapter, the study of economics requires the ability to think like an economist. Authors of economics lessons can draw upon a rich source of examples to provide relevant content for use in practicing critical thinking skills.

Levels of Thinking

When developing economics lessons, lesson writers should consider the full spectrum of intellectual endeavors. Because students need to have some information before they can reason using this information, lesson writers may be tempted to create lessons that emphasize lower levels of learning. However,

teachers who ignore higher-level thinking skills will shortchange their students. A major goal of economic education is to improve students' decision-making skills in their roles as consumers, producers, and citizens. Students must learn to think at higher intellectual levels in order to be wise decision makers.

Bloom's Taxonomy

Bloom's *Taxonomy of Educational Objectives* is a useful guide to make sure your lesson or unit covers the full range of intellectual development. The taxonomy classifies objectives according to a hierarchical structure with six ascendingly complex levels. The following is a brief description of each level, from lowest to highest, with a corresponding example of an objective from a unit on economic systems.

1. Knowledge. This level emphasizes recall of information and concentrates on what the students have read, heard, or seen. A unit on economic systems usually begins with a description of command, tradition, and market economies. An objective for such a unit at the knowledge level might be "Identify the characteristics of a market economy."

2. Comprehension. This level emphasizes the students' ability to explain an idea. An objective for a lesson on economic systems at this level is "Compare and contrast how tradition, command, and market economies determine what goods and services should be produced."

3. Application. This level emphasizes the students' ability to use skills, ideas, and concepts in new situations. An objective at this level might be "Write an essay describing the mix of tradition, command, and market mechanisms in Russia's economy."

4. Analysis. This level emphasizes the students' ability to see relationships and patterns among ideas and concepts. At the analysis level, students break down whole entities into their component parts. An objective at this level is "Analyze the relative importance of market, command, and tradition elements in the economies of the United States and Sweden."

Table 3.3

Bloom's Taxonomy

Knowledge	Knowledge is defined as remembering previously learned material. It represents the lowest level of learning outcomes in the cognitive domain. It requires memory only, repeating information exactly as memorized. To elicit responses at this level of thinking, use words such as <i>define, recall, recognize, remember, identify, describe, label, list, match, name, outline, select, and state.</i>
Comprehension	Comprehension is the ability to grasp the meaning of material. This may be shown by translating materials from one form to another, by interpreting material, and by estimating trends. It requires rephrasing, rewording, and comparing information. To elicit responses at this level of thinking, use words such as <i>convert, defend, distinguish, estimate, contrast, compare, rephrase, paraphrase, and summarize.</i>
Application	Application is the ability to use learned material in new and concrete situations. It requires application of knowledge to determine an answer. This includes applying rules, concepts, principles, laws, and theories. To elicit responses at this level of thinking, use words such as <i>apply, classify, choose, employ, solve, compute, demonstrate, manipulate, modify, operate, and relate.</i>
Analysis	Analysis is the ability to break down material into its component parts so that its organization and structure are understood. It requires the identification of parts, analysis of relationship between parts, the identification of motives or causes, and the determination of evidence. To elicit responses at this level of thinking, use words such as <i>support, analyze, conclude, differentiate, discriminate, infer, relate, separate, and subdivide.</i>
Synthesis	Synthesis is the ability to put parts together to form a new whole. This may involve the production of something such as a theme or a speech, a plan, or a system of classification. It may also require the ability to solve problems with more than one answer. To elicit responses at this level of thinking, use words such as <i>produce, write, design, develop, synthesize, construct, how can we improve, what happens if, create, devise, categorize, rearrange, and reconstruct.</i>
Evaluation	Evaluation is the ability to judge the value of material for a given purpose. It requires making judgments and offering opinions. To elicit responses at this level of thinking, use words such as <i>judge, argue, decide, appraise, compare, criticize, interpret, and support.</i>

5. Synthesis. This level involves pulling together ideas and concepts. An objective in a lesson on economic systems at this level is "Predict the effects of the current privatization plan in Argentina on the country's rate of economic growth."

6. Evaluation. This level involves students in making judgments and offering opinions. A lesson emphasizing evaluation encourages students to express their point of view on an issue. An objective at this level is "Students will debate whether President Yeltsin's economic reforms are the best way to increase the standard of living for Russian citizens."

Bloom's taxonomy helps teachers develop objectives that guide day-to-day instruction and provide a structure for writing test questions and evaluating student progress. The classification of a particular objective at an exact level is not as important as building a unit or course that covers both lower- and higher-level thinking skills.

Learning Styles

Throughout this chapter, important factors to consider when developing an economics lesson are described. Another factor to consider is that people differ from one another. Some people are outgoing and others are shy; some like to read and others like to listen; some like puzzles and others find puzzles frustrating. There is a body of research about learning styles that attempts to describe differences among learners. Many experts have developed their own taxonomies of learning styles. Regardless of the differences in their taxonomies, these experts agree that learning styles differ and that people have preferred learning styles. This does not mean that people cannot learn unless a particular learning style is emphasized by their teacher. No one learning style is considered better or worse than any other.

The differences in learning styles are important to consider when developing lesson plans. Teachers and lesson plan writers should include opportunities for students to learn in more than one way.

Howard Gardner (1983) suggests at least seven different ways in which individuals can learn. He refers to these as multiple intelligences.

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1. Linguistic learners. These individuals are interested in the meaning, sounds, and rhythms of words. They enjoy storytelling, love reading, poetry, wordplay, creative writing, tongue twisters, puns and humor, and find pleasure in working puzzles and solving riddles.

2. Logical-mathematical learners. These individuals enjoy number games, problem solving, pattern games, and experimenting. They have strong reasoning skills and ask questions in a logical manner. Activities that are more ordered and sequential appeal to these learners.

3. Spatial learners. Spatial learners enjoy visual cues and are image-oriented. They like to invent and design. They enjoy creating visual patterns and they need visual stimulation. Maps, charts, diagrams, puzzles, and mazes appeal to these individuals.

4. Musical learners. These individuals enjoy playing instruments and singing songs. They enjoy the sounds of the human voice, environmental sounds, and instrumental sounds. They learn more easily if things are set to music or to a beat.

5. Bodily-kinesthetic learners. These individuals are athletic and active. They enjoy role-playing, dancing, and expressing themselves with movement and bodily action. They derive much of what they learn through physical movement and from touching and feeling.

6. Interpersonal learners. These individuals are very social and intuitive about others' feelings. They are "people persons." They are excellent leaders, have empathy for others, enjoy being part of a group, and are street smart.

7. Intrapersonal learners. These individuals like to work independently. They are very self-motivated and prefer solitary activities. They have the ability to understand their own feelings, motivations, and moods.

How can an economics lesson writer incorporate strategies that address these different learning styles?

1. For linguistic learners, lesson writers should include lectures, reading and writing activities, newspaper activities, impromptu speaking, debate activities, and storytelling.

2. For logical-mathematical learners, writers should include problem solving, patterning activities, experiments, puzzles, abstract symbols and formulas, categorization, classification, and data collection.

3. For spatial learners, writers should include the use of colors and pictures, guided imagery, mind-mapping, manipulatives, puzzles, outlining, and graphic organizers.

4. For musical learners, writers should include descriptive and rhythmic words, musical activities, and stories or activities read aloud or on tape.

5. For bodily-kinesthetic learners, writers should use hands-on activities, simulations, and manipulatives.

6. For interpersonal learners, writers should include cooperative learning groups, skits, role playing, discussion, person-to-person communication, collaboration skills, division-of-labor activities, interviews, and debates.

7. For the intrapersonal learner, writers should include independent projects, writing in a personal journal, and metacognition strategies.

No single economics lesson can incorporate strategies to address each learning style. However, when writing lessons, authors should try to address more than one learning style. Certainly, a series or collection of lessons should afford many opportunities for different learning styles.

Consider *Focus: High School Economics*, published by the National Council on Economic Education (Watts, et al., 1996). This publication, which includes 20 lessons, calls for the use of lectures, discussion, group work, work in pairs, decision making, graphic organizers, visuals, reading, simulation, graphing, flow charting, interpreting graphs, role playing, production activities, calculation, problem solving, division of labor, collaboration skills, categorizing, collecting data, interpreting data, and use of formulas and models. A teacher using these lessons will address the learning styles of different students in several ways. All students will have an opportunity to learn with their preferred style and all may benefit from the variety in learning activities.

Conclusion

There are many important factors to consider when developing economics lessons. It is important for lesson writers to incorporate the economic way of thinking and employ higher-order thinking skills so that students learn to think critically about the many economic events in their lives. Additionally, it is important to offer teachers lessons that address various learning styles so that the teachers more easily meet the needs of their students.

Chapter 4

MODELS FOR ACTIVE TEACHING AND LEARNING

Economics can be taught in a variety of ways. Some ways are more effective than others. The purpose of this chapter is to introduce four well-researched models for teaching and learning that have been found to be highly effective. These models are direct instruction, inquiry, cooperative learning, and simulation.

Direct Instruction

Direct instruction helps convey, in a meaningful way, the basic concepts, principles, and skills of a discipline. Meaningful learning involves establishing a link between new knowledge and what students have learned previously and practice in applying this new knowledge to new situations.

Decades of research on effective teaching have described a pattern of instruction that is particularly useful for teaching a body of content with well-defined concepts and skills. This pattern involves a systematic method for presenting new information in small steps, pausing to check for student understanding, and engaging students in practice activity with the new content or skills. This method seems particularly well suited to teaching economics. Teaching economics often involves presentation of explicit definitions and examples. Directions for graphing data are clear and widely agreed upon. Direct instruction is also useful when the content is new and difficult. Economics is considered by many students to be in this category.

Does direct instruction encourage passive learning? The learner's role in direct instruction is often thought to be passive. This indeed is the case when direct instruction is done poorly and incompletely. However, direct instruction of the sort described here calls for the teacher to engage learners actively in an analysis of the problem at hand and in practice with new skills. Through the use of clear explanation, examples, and ample opportunities for practice, students can be fully engaged in the learning process.

A direct instruction lesson should begin with a review of past learning and set the stage for new learning to occur. Review activities might include questioning

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students about previously covered material, a group activity in which students remind each other of key points, or a discussion of a homework assignment. Setting the stage for new learning might include stating the purpose of the lesson. For example, the teacher might explain that at the end of the lesson the students will be able to understand how price controls can result in shortages. Providing the students with an overview of the lesson, posing a problem that will be the topic of the lesson, and providing a smooth transition to the presentation of new material — these are the steps to take in beginning a direct instruction lesson.

The next step is presentation of new material. Presentation may take a variety of forms. But effective presentations always explain one major point at a time and elaborate the point by offering examples. For example, a lesson might begin with the presentation of new information by means of an overview. The presentation might also involve a carefully planned demonstration of the idea (for example, a quick productivity demonstration, using volunteers from the class) or model a new skill (for example, showing shifts in demand on a graph before students are assigned to do a similar exercise). Effective lessons include checks for understanding. This does not mean asking general questions such as “Are there any questions?” Better ways to check for understanding include asking a student to summarize the main point the teacher is making or to repeat the main characteristics of a key concept that has been explained.

After a key concept has been introduced, there should be time for students to practice using the concept. Students often need a good deal of practice when learning a new or difficult concept or skill. Frequent practice is a key to successful learning. For example, a lesson may include an explanation of the factors that influence shifts in demand and a demonstration of demand shifts on visuals. For guided practice, students may be given problems that show shifts in demand and require students to draw the correct change in demand for each situation. Students could work individually or in pairs, with the teacher providing immediate assistance to the students, checking their progress, noting where they are correct,

and re-explaining ideas to students who require further help. Students might be asked to help each other as they practice using the new ideas.

By the end of the practice session, the students should understand the new idea. The next component of the lesson would involve independent practice — homework assignments — so that the students can become more fluent in their use of the concept or skill.

Finally, a direct instruction lesson would include closure. Closure is used to review the main points of the lesson. Students might be asked specific questions to assist with the review. They might be asked to repeat the key steps of a procedure or review concept definitions.

Inquiry Teaching

Inquiry teaching means different things to different people. Most educators would agree, however, that inquiry teaching involves students in learning how to pose questions about human behavior and striving to answer those questions through the careful analysis of data. Inquiry teaching involves engaging students in asking and finding answers to questions.

Inquiry teaching brings students directly into the scientific process through active teaching strategies. One goal of inquiry teaching is to create independent learners, in a disciplined way. Students learn to set aside emotions and to be objective in defining problems and analyzing data. They learn to respect evidence. They treat knowledge as being tentative and subject to change as new evidence is discovered. Students use logic to test their claims and the claims of others. They become skeptical of easy answers. They try to test their understandings by using a variety of sources of information. Inquiry teaching involves students in higher levels of thinking. They examine the data at hand and strive to identify patterns that might help them test their hunches in an effort to solve the problem under investigation.

What are the effects of inquiry teaching? Educational research in the United States suggests that students involved in inquiry learning gain increased knowledge of content and improved skills in obtaining and analyzing information. Inquiry

approaches work as well as more conventional lecture and discussion techniques in teaching new content.

An inquiry lesson begins with a problem. Students are presented with a puzzling event. Anything that is mysterious, unexpected, or unknown might serve as a good beginning point for an inquiry lesson. After they encounter the problem, students should be encouraged to imagine some possible explanations and to ask questions. In more open-ended inquiry lessons, the students themselves would identify data sources and begin the collection of data that might help them to understand the problem under investigation. The lesson might suggest that students visit libraries or search computer data bases to come up with data sources. More structured inquiry lessons would include an existing data set for the students to use. In either case, students examine the data to identify patterns and to test their initial hypothesis. Finally, students would begin to draw inferences from the data. They would refine their hypotheses to explain their findings more fully and to identify additional problems to be considered.

Inquiry lessons emphasize learning content and learning how to use the scientific method. The inquiry process is as important as acquiring information. The model encourages the idea that the classroom is a community of scholars searching together for better ways to understand the world.

Inquiry and Economics

Using economics in inquiry tasks involves deductive reasoning. "Deductive" here refers to the practice of reasoning from general principles. The discipline of economics provides us with certain assumptions or principles that can be used deductively in thinking about problems. Using these assumptions, students gain assistance in describing problems, in sorting out useful and useless clues, and in proposing explanations.

A list of assumptions that economics teachers and students may use in inquiry tasks was provided in Chapter 3, Table 3.1. These assumptions are not the only ones that can guide economic investigations. They are, however, widely accepted among economists and economic educators. They have power to help explain a

wide range of human behavior. They are, moreover, based on evidence derived over hundreds of years and taken from many cultures. They are not bound by time or culture.

Cooperative Learning

Cooperative learning is a teaching approach that has been widely discussed and has many variations. Some of these variations have been researched very carefully while others have not. Here are the key features associated with the most effective models of cooperative learning.

- ☐ Students are assigned to work in teams to master academic material.
- ☐ Teams are made of high, average, and low achievers.
- ☐ Teams are diverse, by race and gender as well as ability.
- ☐ Reward systems are group oriented as well as individual oriented.

Most studies of cooperative learning have found that classes in which teachers use specified cooperative approaches have significantly greater achievement than classes in which teachers use more traditional approaches exclusively. Cooperative learning methods appear to work equally well for all types of students including students of higher and lower abilities. Cooperative learning has been found to be effective for students in elementary and high schools and across several subjects including mathematics, languages, and social studies. Additional studies have found that cooperative learning enhances self-esteem and improves relations among academically different students.

Researchers stress that simply having students work together in groups does not produce the academic, personal, and social results described above. The way that the group activity is structured is important to producing the desired effects. It appears (Slavin, 1992) that two conditions are essential. First, group rewards must be present. Group rewards encourage students to help their team partners learn the material in the lesson. Weak group rewards encourage students to pay less attention to the learning requirements of their peers. Second, individual accountability must also be present. Individuals must know that they benefit

individually from their performance. Weak individual rewards encourage some students to free-ride on the work of others on the team.

Cooperative learning is most effective when the academic content has clear definitions and correct answers. Because this is often the case in economics, it appears that cooperative learning would be especially useful in economic education.

Many models for cooperative learning exist. The two models described here are among the most powerful.

1. Student Teams Achievement Divisions (STAD). It involves the following steps.

1. State the purpose of the lesson. Provide an academic purpose and a group purpose.
2. Present introductory information, such as an overview of the material, to the class through direct instruction.
3. Set up learning teams and explain the tasks to be performed. Teachers often assign students to individual roles such as reader, recorder, coach, and checker.
4. Assist the learning teams as they work.
5. When the student work is complete, test student knowledge individually.
6. Reward the high achievement of individuals and the high achievement of the groups. Individual and group grades are commonly used. Other rewards might be special certificates or team ranks posted on bulletin boards.

2. Jigsaw. Jigsaw differs from STAD in that it involves the students in working in "home" teams, moving to "specialist" teams, and returning to the "home" team. Here are the steps:

1. State the purpose of the lesson. Provide an academic purpose and a group purpose.

2. Present introductory information, such as an overview of the material, through direct instruction.
3. Set up "home" learning teams.
4. Break down the material into five or six special sections in advance. Ask each "home" team to assign individual students to the special sections for which they are responsible.
5. Divide the students from the "home" teams with the same sections of material into specialized groups and ask them to teach each other the material.
6. Assist the learning teams as they work.
7. Have students return to their "home" teams and teach each other the material.
8. Test student knowledge individually when the student work is completed.
9. Reward the high achievement of individuals and the high achievement of the groups. Individual and group grades are commonly used. Other rewards might be special certificates or team ranks posted on bulletin boards.

Notice the role of the teacher in cooperative learning. In each case the teacher begins the lesson with direct instruction. The teacher also assists the groups actively as they learn the material. While cooperative learning does place more responsibility for learning on the students, it does not remove the teacher from an active instructional role.

Strengths and Weaknesses

Proponents of cooperative learning make a powerful case for the widespread use of this model of instruction. They stress that cooperative approaches place responsibility for learning on the students. Cooperative approaches can provide clear goals for learning and can focus on academic performance. The research base in support of cooperative learning is unusually strong. It suggests that well-structured cooperative lessons improve student achievement more effectively than

do traditional methods. Research also suggests that cooperative learning activities help students develop positive relations with one another.

Critics point to three flaws in cooperative learning. First, they raise a concern about group rewards. They ask whether high-performing students should be denied higher grades because other students in the group failed to learn as well as the high-performing students did. Many parents and students complain vociferously about this aspect of cooperative learning. A second criticism is that cooperative learning stresses students teaching other students. Critics wonder if this is really possible. They ask whether teachers who understand the content should not play the main role in actual instruction. After all, students lack the content knowledge to teach each other. Critics speculate that the more difficult the material to be learned, the less likely it is that cooperative approaches will be successful. Finally, it is probably true that few classroom teachers actually follow the steps outlined in the STAD and Jigsaw models. Many teachers simply view cooperative learning as group work. To the extent that this is true, even though teachers report widespread use of cooperative approaches, we would expect less improvement in academic achievement than the research on cooperative learning predicts.

Simulations

A simulation is a learning experience that allows students to participate in a simplified representation of the social world. A simulation differs from a classroom game. An educational game often involves activities where there is team competition to get the right answers. Examples of learning games are a spelling bee, games where students compete to earn points, or competitive drill activities. Simulations differ from educational games primarily because they enable the student to understand processes through participation in those processes. In most simulations, students take on roles such as city council members, consumers, legislators, or producers. The participants have specific objectives to accomplish such as making a profit or being reelected. In order to accomplish their goals, the participants have resources at their disposal and have to make decisions about how

their resources should be used. In order for the simulation to be effective and realistic, the participants have to adhere to certain rules.

How to Use Simulations

There are a number of practical suggestions lesson writers might wish to consider as they think about using simulations. Here are a few ideas:

Course goals and objectives. Simulations can be attractive devices for teachers almost for their own sake. While this is understandable, any simulation that teachers select should fit directly into their economics curriculum. Simulation activities should help students achieve the objectives of the curriculum.

Practice session. Simulations are often somewhat complex. Therefore, a simulation lesson must include clear and precise instructions. The lesson may suggest that the teacher try to use the simulation activity initially with a practice group. The group could be made up of just about anybody — a few students from homeroom or study hall, for example. Or the lesson writer might declare the first round of the simulation a practice round so that both the teacher and the students can learn how the simulation works.

Set the stage. A simulation is usually used in the context of a broader economics unit. It is important to recognize the type of background experiences the students might need to participate effectively in the simulation. For example, before playing a trade simulation, the teacher might need to review exchange rates.

Room arrangement. Often a simulation requires a changed room arrangement. Students may need to work in groups far enough apart so that one group's strategies will not be overheard by the other participants, or so that groups have adequate space to manufacture a product. Large open spaces might be needed for auction markets, for example. The lesson writer should carefully explain any space requirements for the simulation.

Orientation. It is important that a simulation be clearly introduced. The lesson writer should explain the nature of the simulation and why it is being used. Furthermore, they should take care to explain the various components of the simulation such as the rules, roles, and time limits. However, the introduction can

be overdone. Students often ask many questions that can be answered easily once the action begins. A good rule to follow is to make the introduction as clear as possible but to avoid becoming bogged down.

Teacher role during the action. Most teachers like to feel that they are in charge of their students' learning. Simulations require the teacher to act less as an "instructor" and more as a "coach" who helps students enact the simulation. The teacher may also need to serve as an "umpire" who makes sure that everyone follows the rules and stays on track. A simulation lesson should clearly define the role of the teacher.

Reflection. Most experts agree that participating in a simulation is not likely to be an effective learning experience unless the students have an opportunity to think about their simulated experiences. After the excitement of the simulated action, the lesson should provide an opportunity for students to examine in a more thoughtful way what has happened. The lesson writer should give careful thought to questions that might help students make sense out of a simulation experience. It is particularly important to discuss the economic content that was explored in the simulation. The following are some examples of questions to try:

What economics does the simulation teach?

What plan or strategy did you use?

Which strategies seemed successful?

Which strategies seemed unsuccessful?

In what ways does this simulation seem realistic?

In what ways does this simulation seem unrealistic?

Advantages of Simulations

Simulations are complex learning activities. Success depends on the design of the simulation lesson, the attitude of the teacher, and the skill of the teacher in helping the class enact the simulation. These variables influence the effectiveness of simulations in the classroom.

A special concern about simulations as an effective approach to teaching economics is do they yield good results? Most research suggests that simulations are about as effective as conventional classroom techniques in teaching subject matter. In some ways, simulations are better in teaching knowledge than more conventional approaches. For example, simulations are more effective in helping learners *retain* knowledge they have learned as part of the simulated experience.

A special strength of simulations has to do with student attitudes. Enthusiasts have often argued that their students experience a change in their attitudes and beliefs after participation in a simulation. Research suggests that simulations can be more effective than traditional methods in developing positive attitudes toward academic goals.

Simulations are useful for motivation. Students often express satisfaction with doing simulations and feel excited about what they have learned. It is clear even to a casual observer that simulations enable students to become actively involved in the learning process. Teachers using well-designed simulations find that the large majority (90 to 100 percent) of their students are actively involved.

A well-designed simulation can provide students with opportunities to practice making decisions about important questions. Simulations can help students develop confidence in their decision-making ability. In a business simulation, for example, students might have to decide what price to charge for their product. Students can experiment with making decisions and can witness the simulated consequences while facing minimum risks.

Simulations are generally praised for their ability to bring more reality into the classroom than conventional teaching methods. Lectures, for example, often seem distant from the subjects they describe. Simulations can create a sense of personal involvement with real questions and issues, such as how prices are set in markets. The strength of a simulation depends on how accurately it portrays the reality it seeks to represent.

A final point to be made in favor of simulations is that they provide the teacher with a special teaching tool, one that is quite different from activities used in more conventional teaching methods. Simulations can provide students and teachers with an important change of pace that can be refreshing and motivating. Using simulations can add significantly to a teacher's ability to vary instruction.

Disadvantages of Simulations

As with any teaching technique, simulations present some disadvantages. One problem is that in order to be usable, simulations simplify the real processes they represent. If a simulation is too simplistic, it can actually distort economics knowledge. An important criterion in designing a simulation is to make sure that it is simple enough to enact and realistic enough to provide a worthwhile learning experience.

Simulations require more teacher preparation than traditional lessons. Textbook-based lessons probably involve less planning time and teacher anxiety. In considering the time problem, however, remember that a teacher would not use simulations every day. Simulations often serve as "peak learning" experiences that occur at a few key points during an economics course.

The teacher's preferred style of teaching may affect his or her ability to use simulations effectively. Simulations often require the teacher to shift from the center stage role to become a guide, facilitator, or coach. All teachers experiment with different teaching approaches, and those who experiment with simulation may be surprised by how much they enjoy using it. However, it seems clear that some teachers are more at ease and are therefore more effective using more traditional instruction.

While simulations can engage students at high levels of intensity, they also can produce some unintended effects. For example, students may become so caught up in their simulated roles that they will feel very disappointed if they do not "win." They may be tempted to cheat or break the rules. Teachers need to be cautious about overemphasis on the competitive aspects of participating in

simulations. Periodically, students may need to be reminded of the educational reasons for enacting simulations.

A final problem is the amount of class time necessary for simulations. Some teachers are skeptical of the educational value of simulations and are reluctant to make much of a time commitment for their use. On this issue teachers should consider their goals. If a teacher wishes to improve retention or student motivation, then the gains of using a simulation might outweigh the expenditure of extra time needed to carry it out.

How to Design Simulations

Some simulations are available from organizations such as the National Council on Economic Education, but lesson writers may not find ready-made simulations that are easily adaptable. When this is the case, lesson writers must design simulation activities of their own.

Designing a simulation can be a challenging activity. It sometimes becomes a more complex activity than is initially thought. Here are some steps to consider in designing a simulation.

1. Decide on the purpose of the simulation. Lesson writers probably will begin with an intuitive idea. Writers should try to convert intuition into an explicitly stated objective about what students will achieve. For example, a writer might wish to have students feel the conflicting pressures facing a member of a city council as the council decides how to spend tax money. Or a writer might want students to experience the risks of buying shares in a securities market.

2. Decide on the parameters of the simulation. Students will need to know about the scope and circumstances of the simulated problem — for example, the issues to be decided, the historical context, and the geographic setting. A city council simulation, for example, should proceed from a clear specification of when the action is taking place, what issues are facing the city council members, and some ideas about the city's location.

3. Define the roles the students are to enact. Closely related to setting the parameters of the simulation is identifying the students' roles. Students may take roles as members of groups or as individuals. Ideally the lesson should ensure that each student has a significant role. Students can lose interest in a simulation if they are assigned a weak or insignificant role.

4. Identify the objectives for each role. The students' goals need to be clearly stated. Some objectives might include the following:

In a market simulation, the objective for each participant is to earn a profit.

The goal of city council members in a local government simulation is to be reelected to office.

5. Specify the resources related to each role. In most simulations, the participants have some resources which they must decide how to use. For example, in a simulated securities market, each student might be provided with a hypothetical sum of money to invest.

6. Decide on the sequence of activity. Many simulations use periods of intense interaction followed by short breaks in which the participants analyze the results of their actions. For example, here is an outline of the sequence of activity for a greeting card production simulation:

1. The participants are divided into groups.
2. The students do a practice round (4 minutes).
3. The teacher checks to see if there are any problems.
4. The students begin their first round of production (4 minutes).
5. The results of the first round are recorded on the chalkboard. The results show how many birthday cards each group produced, noting which groups used assembly lines and which used individual producers (2 minutes).

6. The students begin the second round of production (4 minutes).
7. The results of the second round are recorded on the chalkboard (2 minutes).
8. The students begin the third round of production (4 minutes).
9. The results of the third round are recorded on the chalkboard (2 minutes).
10. The teacher asks the class to examine the data on the chalkboard. Through questioning and discussion, the teacher develops the concepts of *specialization* and *productivity*.

7. List the rules the participants must follow. For a simulation to be successful, the participants need to know what they can and cannot do. In a stock market simulation, for example, owners who are not able to sell their stock at a favorable price must live with their losses. The lesson writer must identify the rules for a simulation, keep in mind the reality to be portrayed, and construct rules that make the simulation as realistic as possible. A writer cannot account for every imaginable situation in a classroom simulation. The writer should reflect carefully on how the lesson will progress, step-by-step, in the classroom.

8. Formulate scoring criteria or criteria for success. A decision needs to be made about what constitutes success. For a student operating a simulated business, earning a profit at the end of the last round might constitute success.

After the basic design of the simulation has been developed, it is time to try the simulation with students. Teachers and students may be invited to help with an experimental run of the simulation to see if they are able to accomplish the goals of the lesson. Their comments can be very helpful in making the changes that will help make the simulation more effective. See Chapter 8 for more guidance on using field tests to refine your simulation lesson.

Conclusion

Lesson writers have several alternative models to consider when developing a new economics lesson. There are many ways to teach economics effectively. This chapter on active learning presents four well-researched models.

Direct instruction lessons convey, in a meaningful way, the basic concepts, principles, and skills of a discipline. These lessons involve presenting new information in small steps, pausing to check for student understanding, and engaging students in practice activity with the new content or skills. Often a traditional lecture can be adapted to a direct instruction lesson; therefore, direct instruction lessons may be the easiest to write.

Inquiry lessons involve students in asking and finding answers to questions. These lessons emphasize learning content and learning how to use the scientific method. Often, the lessons include data for students to use in analyzing the problem presented.

Cooperative learning lessons involve students in team work. Teams are diverse academically as well as by race and gender. In cooperative lessons, there are both team and individual rewards. Cooperative learning lessons place more responsibility for learning on the students.

Simulation lessons allow students to participate in simplified representations of the social world. Although simulations are usually enjoyed by students, they are complex learning activities. As a result, these lessons are the most challenging to write.

CHAPTER 5

DETERMINING WHAT STUDENTS HAVE LEARNED

Every good economics lesson has an assessment component. Assessment is important for several reasons. Students deserve to know how they are doing so they can make changes that will improve their performance. Teachers need feedback in order to alter and improve their lessons and to know to what degree each student is achieving each objective.

Starting the Assessment Process with Good Objectives

In Chapter 3, Bloom's taxonomy of educational objectives is presented. There is nothing magical about classifying objectives by cognitive level, but this classification encourages teachers to write objectives that cover both lower-level and higher-level thinking skills. Many assessment instruments fail to cover higher-level thinking skills. When writing an economics lesson, teachers should be sure that each objective is evaluated. If an objective is not important enough to be evaluated, it is not important enough to be included in the lesson.

Comparing Types of Assessment

There are several types of assessment instruments; each has its advantages and disadvantages. An objective test item has one correct or best answer. The test taker either selects the correct or best answer or supplies the correct or best answer. Objective test items include multiple-choice questions, true-false questions, matching questions, fill-in-the-blank questions, and short-answer questions.

Objective test items offer several advantages. They are easy to grade, and there is no judgment involved in determining whether the answer is right or wrong. There is one correct answer and everyone agrees on it. Two trained teachers grading a project or essay question may reach different conclusions, but this should never happen with an objective item. Objective test items are particularly appropriate for measuring knowledge and comprehensive objectives. For example, they provide an easy method for checking whether students have really read an assignment.

Objective test items have several disadvantages. Although good objective test items are easier to grade, they are difficult to write. A good objective test takes time to write, type, and proofread. Many poorly written objective items test only trivial information that students have memorized. Students can sometimes guess the right answer or figure it out by clues or by the grammar in the question. In an objective test, students can demonstrate only what they know about specific pieces of knowledge and cannot express themselves on a general topic.

Essay items address many of the deficiencies of objective items. Essay items are easy to write, allow students to choose among a range of responses, and permit testing of higher-level thinking skills. On the other hand, essay items are difficult to grade. The effective grading of essay questions involves constructing a specific rubric for their scoring. A good rubric assigns points according to an analysis of the students' answers and helps students understand how their essays were graded. A good rubric can prevent good writers with limited knowledge of the subject from bluffing their way to a good score.

The latest trend in assessment is called performance-based assessment or authentic assessment. With this type of assessment, a student's grade depends on how well he or she performs a particular task or completes a project. For example, in an economics class studying the stock market, each student may be given a hypothetical sum of \$100,000 to invest. Each student's grade would depend on how high a return he or she obtained compared to the other students. A student's grade might also depend on charting the stock or on a written analysis of a stock. Students could also be assigned to make posters illustrating an economic concept such as *scarcity*. The posters would be graded on creativity, content, accuracy, and appearance. Another example of performance-based assessment involves students creating their own classroom economy with banks and businesses that produce goods and services. Students could be graded on profit levels, quality of a goods produced, and accuracy of record keeping.

Because performance-based or authentic assessment measures actual performance on tasks and projects, it can cover a wide range of skills.

Nevertheless, these skills may be hard to classify and to grade. The standards used to grade a project take time to develop, and general standards may not differentiate one student's work from another's.

Table 5.1 summarizes the advantages and disadvantages of types of assessment instruments. The key idea is that assessment instruments complement each other. Good evaluation programs involve using the three types of assessment. The rest of this chapter focuses on how lesson writers can improve the quality of each type of assessment technique.

Table 5.1
Comparing Types of Assessment

Type of Assessment	Advantages	Disadvantages
Objective Items	Are easy to grade Sample a range of skills and knowledge	Are difficult to write Restrict student response Allow guessing
Essay Items	Are easy to write Allow students freedom to respond Can assess higher-level thinking skills	Measure a limited range of skills and knowledge Are difficult to grade May allow bluffing
Performance Tasks	Stress actual performance Allow students freedom to respond Permit a wide range of skill demonstration	May not work for all concepts and skills Are difficult to grade Can make it difficult to draw distinctions between levels of student performance

Writing Multiple-Choice Questions

Table 5.2 lists tips for writing multiple-choice questions. Good multiple-choice questions are designed to evaluate, not to teach. They are clear

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and concise. If possible, the stem of the question should be one sentence or phrase. In addition, negative stems containing words such as "not," "least," and "except" should be avoided. For example, a question such as

Most nations have elements of a market economy. Which of the following characteristics is not essential for a market economy?

should be changed to question 7 in Table 5.3: "Which of the following is most important for a market economy?"

Table 5.2

Tips on Writing Good Multiple-Choice Questions

The stem

1. Ask a specific question or write an incomplete statement completed by the options.
2. Make the stem clear, concise, and brief. It must be long enough to make the question clear, but it should not be a story problem designed to teach the concept.
3. Avoid (or make sparing use of) negative stems, which include words such as "not," "least," and "except."

The options

1. Have a single, clear, correct answer.
2. Vary the location of the correct answer in the list of options.
3. Avoid grammatical clues that might give away the answer.
4. Make all options about the same length.
5. Avoid patterns such as making the longest or shortest option usually correct.
6. Avoid tricky or confusing options.
7. Make all responses plausible.
8. Avoid (or make sparing use of) "all of the above" and "none of the above."
9. Keep options clear, concise, and brief.
10. Write numerical answers in ascending or descending order.

Every possible answer for a multiple-choice question should be plausible. Options that make no sense should not be given. For example, an inappropriate option in question 3 in Table 5.3 would read, "How to serve more pizza at school lunches." There should be no grammatical clues that give away the answer. The questions in Table 5.3 all have noun-verb agreement; in other words, if the stem is plural, the options should all be plural. The options should be approximately the same length. If one option is shorter, as in question 4, it should be an incorrect answer.

Other tips for writing better multiple-choice questions are to vary the location of the correct answer, to write answers with numbers such as question 5 in ascending or descending order, and to avoid the use of "all of the above" and "none of the above." Students need only to know that two options are correct to select "all of the above." If anything is wrong in a correct option, a student can answer "none of the above" and argue the point in class.

Table 5.3

Sample Multiple-Choice Items

1. When the United States trades wheat to Saudi Arabia in exchange for oil:
 - *A. both countries gain
 - B. both countries lose
 - C. the United States gains, and Saudi Arabia loses
 - D. Saudi Arabia gains, and the United States loses
2. The opportunity cost of a new public high school is the:
 - A. money cost of hiring teachers for the new school
 - B. cost of constructing the new school at a later date
 - C. change in the annual tax rate to pay for the new school
 - *D. other goods and services that must be given up to build the new school
3. Which of the following choices do people in all economic systems face?
 - A. how to balance imports and exports
 - B. how to balance the government's budget
 - *C. how to make the best use of scarce resources
 - D. how to save money to reduce the national debt

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4. When a nation's human and material resources are fully employed, more of any one product:
 - A. can be produced only if private enterprise does so rather than the government
 - *B. can be produced only if there is less production of other products
 - C. can be produced only if there is a general decrease in prices
 - D. cannot be produced
5. Sandy Smith can take a job paying \$20,000 a year when she graduates from high school, or she can go to college and pay \$10,000 a year for tuition. Measured in dollars, what is her opportunity cost of going to college next year?
 - A. \$0
 - B. \$10,000
 - C. \$20,000
 - *D. \$30,000
6. The specialization of labor results in:
 - A. increased price inflation
 - B. less output per hour worked
 - *C. greater economic interdependence
 - D. more equal distribution of income
7. Which of the following is most important for a market economy?
 - A. effective labor unions
 - B. good government regulation
 - C. responsible action by business leaders
 - *D. active competition in the marketplace

Writing True-False Questions

True-false questions appear to be easy to write and to grade. However, effective true-false questions are difficult to write because unless the statement is entirely true, it is false. For example, avoid statements such as "Money functions as a medium of exchange and as an economic resource." The first part of the statement is true, and the last part is false. True-false items should not include the word "not." For example, the statement "Specialization is not a characteristic of a market economy" should be changed to "Specialization is a characteristic of a market economy." Also, the words "always" and "never" should be avoided. If a student can find a single exception to the answer, the teacher will have to change

the key. Finally, there should be about an equal number of true and false items. Students will catch on quickly if most of the questions are either true or false — and they will have a 50 percent chance of guessing right without any clues. Table 5.4 summarizes tips for writing good true-false questions.

Table 5.4

Tips on Writing Good True-False Questions

1. Make all statements definitely true or false.
2. Write clear, concise, and brief statements.
3. Write about an equal number of true and false statements.
4. Avoid complex and compound statements.
5. Avoid statements with words such as “not,” “never,” and “always.”
6. Avoid qualifying phrases such as “most of the time” and “usually.”
7. Test key objectives, and avoid detailed, tricky, or trivial statements.

Writing Essay Questions

Essay questions are best used to test higher-level thinking skills. Students need strong writing skills in order to perform well on essay items. Therefore, teachers who use essay questions must provide practice in writing answers. Unless students learn the writing and thinking processes for answering essay questions, these tests will measure student knowledge inadequately.

One major weakness in poor essay questions is the question’s failure to define the task appropriately. Students are unclear as to what they are being asked to write. For example, a question should not ask, “What will be the effects of a new rent-control law?” Rather, a question such as the first question in Table 5.6 should be asked. This question asks for specific information in both the long run and the short run and asks the students to use a graph.

Question 1 is also good in that it stresses higher-level thinking skills. A student who has merely memorized the effects of price ceilings probably would not do well on this question. Questions 2 and 3 also thwart the memorizer of facts. Question 2 defines a monopoly rather than using the term. Question 3 asks for understanding the multiplier process rather than asking for a memorized formula.

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Essay questions should also state time and/or page limits so students can judge the detail needed in the response. Essays requiring the students to determine the complexity and length of the answers should be take-home assignments.

Teachers sometimes give students a list of essay questions and allow the students to choose one or two of them to answer. Studies have shown that this practice lowers test validity and reliability. Giving students a list of questions in advance does help them to study for the test, but the teacher should select the questions the students actually answer. One disadvantage of providing possible answers to questions in advance is that some students will attempt to memorize their answers; this can defeat the purpose of testing higher-level thinking skills.

Table 5.5 summarizes tips for writing better essay questions.

Table 5.5

Tips on Writing Good Essay Questions

1. Write questions that test important objectives.
2. Define the students' task clearly and specifically.
3. Utilize essay questions for higher-level thinking skills such as analysis, synthesis, and evaluation.
4. Specify time and/or page limits for each item.
5. Avoid allowing students to select from a list of essay questions.
6. Construct a specific scoring rubric for grading each question.

Table 5.6

Sample Essay Questions

1. You are a member of the city council and are considering a law to control rents below the free-market equilibrium rent.
 - A. What would be the effect of such a law on rents and on the quantity of apartments supplied and demanded in the short run? Why?
 - B. What would be the effect of such a law on rents and on the quantity of apartments supplied and demanded in the long run? Why?

Be sure to explain why your predicted effects will occur. Use a graph in your explanation.

2. In a particular market, there is only one seller and significant barriers to entry.
 - A. How does this firm determine its equilibrium output and price?
 - B. Explain whether or not this firm is producing an economically efficient level of output. Be sure to define *economic efficiency* in your answer.
3. A town's largest industry invests \$50 million to expand its plant capacity. Without using a formula, explain how this expenditure will affect the town's economy through the multiplier effect.

While essay questions are generally easy to write, they are tough to grade. Unless a specific grading scale is developed, the question will lack reliability. A rubric is a specific grading scale. In addition to helping teachers provide more reliable grading, a rubric can be given to the students so they can understand how the test was graded and why they received the scores they did. A scoring rubric for an essay question on the *1996 Advanced Placement Macroeconomics Test* is presented below. The scoring standards are specific. Several economics teachers grading the answers to this question should reach the same conclusion or score on a student's response.

A Sample Scoring Rubric

Macroeconomics 1996/Question No. 2

Exchange Rates

Year	Dollar	Yen	Franc	Mark
1	1	350	4.0	1.8
2	1	350	5.8	2.3

- (a) Given the change in the value of the dollar between year 1 and year 2, as indicated in the table above, describe the effects this will have on United States tourism overseas.
- (b) Using an aggregate supply and aggregate demand graph, explain the impact of the change in the value of the dollar on price and output levels in the United States.

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Rubric for Scoring Macroeconomics 1996/Question 2

Point Allocation

Basic point distribution: 1 point for (a), 2 points for (b), and 2 points for (c).

Correct Answer:

Part (a): 1 point

U.S. tourism overseas will increase [because the dollar is stronger against the franc and the mark].

Point:

1 - Must include a conclusion with respect to tourism as the question asked.

Part (b): 2 points

The increase in the value of the dollar results in more imports and fewer exports; therefore, the aggregate demand curve shifts to the left resulting in a decrease in output and price in the United States.

Points:

- 1 - Correct AD-AS graph and results with respect to price level and output. [Aggregate supply shift only is not sufficient; see note below.]
- 1 - Relating change in value of the dollar to the decline in exports and increase in imports, and the relationship of net exports to aggregate demand.

Part (c): 2 points

The increase in the value of the dollar makes foreign goods less expensive for U.S. consumers and U.S. goods more expensive for foreign consumers; therefore, imports will increase and exports will decrease. The increase in imports and decrease in exports increases the trade deficit.

Points:

- 1 - Relative price change causes the increase in imports and decrease in exports.
- 1 - Increase in trade deficit or a decrease in the trade surplus or the trade balance worsens.

Note: The argument that the dollar appreciation makes foreign input factors less expensive and thus the aggregate supply curve would shift rightward is acceptable in conjunction with the decrease in aggregate demand. The aggregate demand curve will always decrease whereas the shift in the aggregate supply curve is highly dependent on other factors.

Performance Tasks or Authentic Assessment

One of the most controversial types of assessment involves use of performance tasks or authentic assessment. Performance task assessment is not really new. After all, athletes, musicians, and artists always have been assessed on their performance. What is new is applying these ideas across the curriculum. This type of assessment is closely associated with portfolios of learning. The thrust of portfolios of learning is that when students maintain portfolios of their work, they learn to assess their own progress as learners, and teachers gain new views of their accomplishments in teaching.

Table 5.7

Tips on Writing Good Performance Tasks or Authentic Assessments

1. Start with a project or activity that you have used before and make it "authentic."
2. Set a clear focus for the assessment. Be sure the pieces fit together in a meaningful way. Be sure the students remember the learning as well as the activity.
3. Break the project or activity down into easy pieces. Develop one part of the assessment at a time. Add another one when you have time.
4. Allow students to help decide on what the assignment should be graded. They can even help select the grading criteria and help write the rubrics.
5. Review existing rubrics to select grading criteria that are a good fit for the content you are teaching.
6. Don't expect perfection. Assessment is an ongoing process. Changes can be made over time. Ask your students to help you improve the assessment.
7. Don't grade too many things in one project or activity. Three is a good number. You don't have to evaluate all the things that are happening. Focusing students' attention on a few criteria will result in higher quality work.

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As Table 5.7 illustrates, authentic assessment is difficult. First, the task must be worthwhile and interesting for the student. The task must have a clear focus. Then it must be broken down into easy pieces so each piece can be assessed. The student and teacher must then agree on how the project should be assessed. After that, a rubric must be developed, detailing the criteria for assessment and the standards used in that assessment.

Why should a teacher do all this work? Advocates of portfolio-based assessment believe that it makes learning more realistic and focuses responsibility for learning on the student. As students add to their portfolios, they can visualize their progress. Life is not a score on a teacher's exam. Instead, life is a series of tasks that evolve over time. Teachers and students using portfolio assessment continue to learn long after they take note of an isolated test score.

An Economics Portfolio

An economics student might develop a portfolio on a bill in Congress that would increase the minimum wage. The first part of the portfolio might include newspaper and magazine articles on the minimum wage. Then the student might write a persuasive essay supporting a higher minimum wage and another persuasive essay opposing a higher minimum wage. Another part of the portfolio could relate economic theory to the minimum wage. Graphs could be utilized. An advanced-level portfolio could compare the effects of a minimum wage in more competitive labor markets with the effects in less competitive labor markets. The student could interview his or her member of Congress and analyze the representative's position. Finally, the student could write an essay or give a talk to the class, describing his or her position on the minimum wage. Of course, the work in the portfolio should be chosen by the student in consultation with the teacher. The teacher provides guidance and feedback throughout this process. Criteria for grading are developed; and at the end, the student receives a grade.

It is easy to see that completing a project such as this might be much more valuable than answering an objective question or an essay question on the effects of raising the minimum wage. However, it would also take much more time to

plan and to grade. And it puts much more responsibility on the student to sort sense from nonsense.

Conclusion

Assessment is an important component of every lesson. Comprehensive assessment should evaluate instruction at all levels of cognitive learning. Objective questions, such as multiple-choice and true-false questions, are particularly effective in evaluating lower cognitive levels.

Performance-based assessment and essay tests are particularly effective in evaluating higher-level thinking skills. However, the scoring of these assessment items is more difficult and more subjective than for objective items.

A mixture of objective items, performance tasks, and essay items is the basis for a thorough assessment program.

Chapter 6

GENERATING GREAT TEACHING IDEAS

The previous five chapters of this handbook provide information on a variety of things to consider when writing economic lessons. The authors describe economic content and skills to teach, discuss learning styles to address, suggest active techniques to use when designing a lesson, and offer ideas for assessment. The next step in developing lessons is to generate an idea or ideas around which a lesson can be created.

Will the lesson have students involved in group work, discussion, lecture, role play, research, brainstorming, interviews, or some other learning strategy? Will the lesson be built around a primary resource, a poem, a children's story, a newspaper article, information gathered by students through surveys or interviews, statistical data, maps, pictures, advertisements, or some combination of these? The idea generation step is the most creative and enjoyable part of writing lessons. It can also be the most frustrating and difficult.

Generating lesson ideas has two components. The first, and easier, step of the two is establishing the parameters or focus of the lesson. The second, and more difficult, step is the actual idea generation.

Establishing parameters before writing a lesson helps narrow the lesson's focus, thereby reducing the number of concepts to be taught. This makes for a tight lesson that covers a few ideas well. To narrow the scope of the lesson, some basic questions must be answered:

- ☐ For which grade level will the lesson be written?
- ☐ What economic content is to be covered? The benchmarks from the *Voluntary National Content Standards in Economics* are an excellent resource for use in determining appropriate content for various grades and the depth of coverage.
- ☐ Is the lesson part of a sequence of lessons or is it a stand-alone lesson?
- ☐ What skills are to be developed? The lesson can include economics skills, but it can also address other skills such as writing, math, reading

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comprehension, or oral communication skills. Often, lesson ideas begin to surface as teachers target skills.

- ☐ In which subject area is this lesson to be taught? Is it a straight economics lesson or is it one that integrates economics into math, language arts, science, or history?
- ☐ What are the lesson goals? What is it that students should know and be able to do once the lesson has been completed? These goals give the lesson writer a direction or a lens through which to filter ideas. If an idea will not help students achieve the lesson's goal, it must be eliminated. At this point, creative lesson ideas are often dropped or dramatically altered because they do not contribute to helping students achieve the lesson objectives.

Once these questions have been answered, lesson idea-generation begins. Usually, this involves interaction with other writers, curriculum developers, or coworkers. Seldom do lesson writers sit down at the computer and find that an idea for a lesson magically surfaces. In fact, many ideas are generated before one or two actually make it into the lesson. There are several ways to begin the generation process.

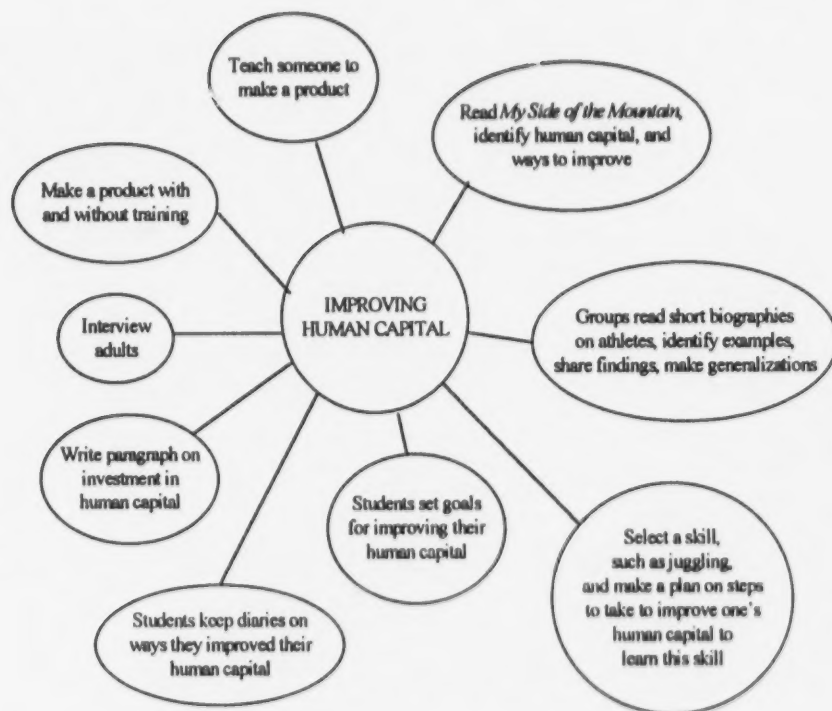
Brainstorming

One strategy is brainstorming. Working with several individuals, the writer shares his or her answers to the questions listed earlier in this chapter and specifically states what the lesson is to accomplish. Then others in the group begin completing an invitational stem such as "What if the students. . . ?" or "Why don't we have the students. . . ?" Members of the groups begin to piggy back on one another's suggestions and lesson ideas begin to emerge.

Brainstorming is an unstructured process of free-flowing thoughts. By clustering these thoughts, ideas can be linked together. To conduct brainstorm clustering, the lesson goal and parameters are written in the center of the page in an oval. As ideas are generated during brainstorming, they are connected to the center oval with lines. Some ideas located around the outside of the oval that

seem to go together can also be connected with lines so that a web of ideas emerges. (See Figure 6.1.)

Figure 6.1
Brainstorming Web



Another way of clustering is to write each idea on a self-stick removable note. After many ideas have been generated, the removable notes can be grouped or clustered together. As this is done, one cluster of ideas begins to crystallize around which a lesson can be developed.

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GENERATING GREAT TEACHING IDEAS

Reflective Thinking

When generating ideas, it may be important to think reflectively about the concept to be taught. This involves thinking about the concept in light of the real world and considering the best way to simulate the real world in the classroom in order to teach the concept. For example, in a market economy, economic activity takes place in markets. This is an abstract concept for students to understand. To bring an experience of markets to the classroom, lesson writers must first reflect on how markets work and think of ways to demonstrate this idea in the classroom. This might result in an activity in which students interact as buyers and sellers followed by a discussion that relates the classroom activity to real-world experiences.

Developing a lesson does not always begin with a novel idea. An excellent strategy for gleaning ideas is to look at previously developed lessons. Keeping a lesson-idea notebook or file in which a listing of techniques and strategies used in other lessons are recorded is a great resource for teachers working on idea generation. For example, notations might read as follows:

Lesson Ideas

- ☐ picture study, answer questions, draw a conclusion
- ☐ mini-lecture, discussion, analyze newspaper article
- ☐ reading, small groups develop flow charts, groups share, second reading, individuals develop flow charts
- ☐ read two vignettes, compare and contrast using Venn diagram, describe other examples with similar characteristics

Adapting Lessons

Often an existing lesson can be adapted or modified for different age levels, subject matters, regional differences, and cultural differences. In a children's literature and economics lesson for the elementary classroom, a teacher reads the children's book, *Jonathan Cleaned Up and Then He Heard a Sound or Blackberry Subway Jam*, by Robert Munch. After the story, the teacher explains negative and positive externalities and asks for examples from the story of each type. Students

demonstrate what they have learned by conducting a survey of their community, looking for examples of externalities and identifying them as positive or negative. Students share their results, determine which type of externality is most common in their neighborhood, and state what can be done to correct it. This lesson can be adapted for use with older children by using a more sophisticated reading and questions that require higher-level thinking skills. The application can involve a similar survey, with students explaining their conclusions and solutions in a letter-to-the-editor format.

A lesson that discusses goods and services produced by government might include examples from an urban setting. Such a lesson can easily be adapted for a rural environment by using appropriate examples. A lesson that teaches the economic impact on a coastal city of a port closing might work better with students in a land-locked region if the lesson focuses on a plant closing in their area. Teachers in the United States might teach a lesson on global interdependence by looking at the sources of raw materials for the production of a chocolate candy bar. Teachers in another country can adapt the lesson by using a product more applicable to their region or economy.

Conclusion

Lesson ideas often blossom at times when one is not actually working on a lesson. Sometimes the most creative ideas come when driving the car, walking, taking a shower, or just moments before going to bed. Whenever the ideas flow, it is important to capture them and write them down.

This chapter suggests some techniques for generating lesson ideas. These are not all-inclusive, but they have been tried and have produced results for others. Successful lesson developers, those with experience and novices, find the idea generation stage creative and rewarding. They also know that it is difficult and, at times, frustrating — requiring hours of thought and brainstorming with others before an idea emerges. When in the midst of generating lesson ideas, remember this quotation from Arthur Brisbane, “The dictionary is the only place where success comes before work.”

Chapter 7

LESSON WRITING BASICS

Thomas Edison reportedly remarked, "Genius is 1 percent inspiration and 99 percent perspiration." Thomas Edison was a great inventor; more important, he was a great innovator. An inventor is the creator of a new good or service; an innovator introduces an invention into a use that has economic value.

Lesson plan writers should be inventors, but inventing is not enough. Lesson plan writers also need to be innovators. Although a writer may have an exemplary idea for an economics lesson, it will not be used by others unless it is not only inventive but also clear, concise, accurate, thorough, and easy to use. When a lesson possesses all of these characteristics, it acquires economic value — it becomes innovative.

Frequently, classroom teachers will develop clever approaches to teaching economics in their classrooms. They will write their ideas to share with others for a graduate class assignment, a school district curriculum project, a contest, or commercial publication. Many of these lessons never succeed and are never shared with others because a systematic approach to lesson writing was not taken. Perhaps the authors provided a stream of consciousness diary, recounting daily teaching experiences in a way that was not concise, orderly, or readily adaptable by others. Under these circumstances, the predictable result is that the clever approach will be used in only one classroom — the writer's.

Challenges abound in the construction of a lesson plan. There are many things to be considered carefully and thoughtfully. A great deal of effort must be expended on a well written lesson.

Lesson Format Guidelines

Economic educators have used many reliable formats in writing effective lesson plans. The National Council on Economic Education and members of its national network have published many excellent instructional materials using different, albeit similar, formats. The authors of this publication recommend the format in Table 7.1 for a comprehensive lesson plan.

Table 7.1
Lesson Plan Format

1. Lesson description
2. Content standards and benchmarks
3. Economic concepts
4. Related subject areas
5. Instructional objectives
6. Time required
7. Materials required
8. Procedure
9. Closure
10. Assessment
11. Extension/connection

1. Lesson description. The lesson description introduces the teacher to the purpose or goals of the lesson and provides a brief description of the procedure used. Teachers will review this section to determine whether the lesson meets their instructional goals. For this reason, it is important to state the goals clearly. The author may also include a rationale for the lesson — a reason why it is important for students to learn the economics taught in the lesson. A concise and appealing lesson description will encourage the teacher to read the entire lesson rather than reject it based on the cursory overview.

2. Content standards and benchmarks. Teachers often seek a lesson that will address certain economic content. Information provided in this section answers that need by stating the economics content standards and benchmarks that are specifically taught in the lesson. The *Voluntary National Content Standards in Economics* and related benchmarks are available from the National Council on Economic Education, state councils on economic education, and local centers for economic education located throughout the United States. (See Chapter 1 for an overview of the standards and benchmarks.)

It is important to list only the content standards and benchmarks that are actually taught in the lesson. Sometimes, authors will list content standards and benchmarks that are referenced or mentioned in a lesson, but not taught. If an author uses the phrase “supply and demand” in a lesson and does not include procedure steps to teach those concepts, it is inappropriate to list a content standard related to supply or demand. Such inclusions are essentially false advertising for the lesson. The teacher expects students to learn the content, but it is not delivered in the lesson. Lesson writers should not list content standards or benchmarks that are not explicitly taught and fully explained in the lesson.

3. Economic concepts. Some teachers may not be aware of the national economics standards and benchmarks and may be looking for a lesson that teaches a certain economic concept, such as *productivity* or *scarcity*. It is helpful to list the economic concepts taught in the lesson. The same caveat about standards and benchmarks applies here. Lesson writers should not list economic concepts that are not explicitly taught and fully explained in the lesson.

Many writers are tempted to list concepts included in the lesson that are not economics concepts, such as *coin denominations*, *business plan*, or *price comparison shopping*. To ensure that concepts listed are economics-related, lesson writers should refer to *A Framework for Teaching Basic Economic Concepts with Scope and Sequence Guidelines, K-12*, published by the National Council on Economic Education, or a college-level economics textbook.

4. Related subject areas. Many economics lessons are integrated with other subject areas, such as language arts, mathematics, or history. (See Chapter 2 for more on integration.) Given the teacher’s scarce labor time, integration is frequently deemed desirable. Integration not only provides the teacher with an opportunity to teach different disciplines at the same time but also provides a meaningful context to enhance student learning. An economics lesson about innovation and economic growth that uses the industrial revolution as an exemplar may be very attractive to a U.S. or world history teacher who wants to kill two

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birds with one stone. Whenever related subject areas have been integrated in a lesson in a meaningful way, they should be listed in this section.

5. Objectives. The instructional objectives of an economics lesson describe the author's educational intent for the students — that is, the desired learning outcomes. Objectives are *not* brief descriptions of lesson content or descriptions of activities in which students will participate. Well-written objectives describe what the student will be able to do after learning the lesson.

Before writing an economics lesson, the author must identify the learning outcomes so that the lesson's activities are directed toward the desired result. If the objectives are not clear, the author may very well end up with other outcomes that are unexpected or undesirable. There are some basics to keep in mind when crafting instructional objectives. The actual format of instructional objectives varies in educational publications; however, good objectives are student-oriented, observable, clear and unambiguous, and descriptive of a learning outcome.

Student-oriented. An instructional objective describes what change will take place in the learner — the student. Many instructional objectives begin with the phrase, "the student will be able to." The focus is on the student, not the teacher. Some writers have included instructional objectives that say such things as "teach how to draw a demand curve" or "show a video on supply and demand." These objectives focus on teacher activities, not student learning. Remember that instructional objectives describe what the student will be able to do after completing the lesson.

Observable. Lesson writers differ in the level of specificity they seek in describing student learning outcomes. Sweeping generalizations and highly itemized instructions for each student should probably be avoided. It is important, however, to write objectives in a way that specifies how students might *show* that they have learned the idea or skill in question.

Consider the following objectives:

- ☐ Students understand demand.

- Students describe the relationship between the price of a product and the quantity demanded.

The first objective is very general and it does not say how students might show, in any observable way, their understanding. What does it mean to “understand” demand? This type of objective does not provide adequate information to the teacher about what the student will be able to do after completing the lesson, nor does it guide the teacher’s evaluation of whether students have achieved the objective. The second objective, however, clearly identifies the expected student behavior.

Clear and unambiguous. The key to a clear and unambiguous instructional objective is a clearly stated verb describing an explicit action that the student should be able to take. Table 3.3, in Chapter 3, provides examples of verbs that clearly describe what students will be able to do at various levels of learning. A clear objective will include an appropriate verb denoting observable action, as well as an accompanying object of that verb. For example, students will define *productivity* as output divided by input. This objective explicitly identifies what the student will be able to do. The student will be able to define *productivity* in a specific way. The objective is unambiguous in that there is only one possible meaning for the statement. Furthermore, most observers could judge whether students had achieved that objective.

Descriptive of a learning outcome. Lesson objectives differ from lesson activities or procedures. Lesson objectives focus on what the students will achieve by completing the lesson. An objective stating that students will practice graphing demand curves does not specify a learning outcome. It specifies a learning activity that is designed to help students reach some outcome, such as the ability to describe the relationship between the price of a product and the quantity demanded.

6. Time required. What is the appropriate time period envisioned in an economics lesson plan? The curt response is, “as long as it takes.” Some lessons might take 30 minutes; some might take two class periods. But lesson writers

LESSON WRITING BASICS

should remember that the curriculum is crowded. Teachers are more likely to teach a lesson that takes one class period than four class periods. Don't try to include too much in one lesson. A rule of thumb that may be used is "to teach less is to teach more." If a lesson focuses on a plethora of economic concepts, students may end up learning very little. Keep the lesson focused and to the point. Then field test (see chapter 8) the lesson in a variety of classroom situations to determine the most likely amount of time required.

7. Materials required. A list of materials required for the lesson should be included at the beginning of the lesson. Teachers do not appreciate unexpected surprises in the procedure section of the lesson (for example, "obtain original drafts of advertising copy from a local ad agency"). They need to know exactly what student worksheets, visuals, and supplies they must prepare prior to meeting the class. **Include copies of all student worksheets and visuals that will be used in the lesson.** If a teacher must create a student worksheet or visual, the teacher is unlikely to teach the lesson. Whenever possible, it is a good idea to limit a student worksheet to one page. In general, teachers do not like to reproduce multiple-page worksheets.

8. Procedure. The procedure section of a lesson plan is the core of the lesson. It describes how the teacher will help students achieve the instructional objectives. The learning activities provided in the procedure should meet several criteria.

- a. *Use active learning approaches whenever possible.* Research has demonstrated that students learn best when they are actively involved in the learning situation as opposed to listening passively to a lecture for 40 minutes. In Chapter 4, several techniques for active learning are presented.
- b. *Carefully evaluate what the targeted students can and cannot do.* Do they have the prerequisite skills to complete the lesson? Will the lesson outlast their attention spans? Are the activities varied enough to maintain their interest?

- c. ***State the procedure clearly and precisely.*** This point can not be overemphasized. Leave nothing to the imagination of the teacher. Take nothing for granted, except that the teacher can read. All too often, lesson plans are written at a high-inference level that is confusing to the reader. If a teacher cannot understand what must be done to teach the lesson, the teacher will not use the lesson. It is best to provide careful, concise, step-by-step explanations of the activities. The user should not have to guess about anything. Assume that someone who has never taught before will pick up this lesson and teach it for the first time.
- d. ***Make sure that all economic content is accurately stated.*** Because these lessons will be written to teach economics, the author must not be sloppy in the use of economic vocabulary or in the description of economic principles. Economic terms and principles must be used as an economist would use them, not as a lay person. It is much easier to teach a concept than to correct a misconception.
- e. ***Include definitions of economic terms and principles pertinent to the lesson.*** It is best to assume that the teacher does not have a complete grasp of the economics taught in the lesson. If the procedure fails to provide a clear definition of economic terms or principles used in the lesson, the teacher may fail to do so or may use incorrect definitions. Once again, leave nothing to imagination. If lesson objectives indicate that students will learn certain economic terms or principles, they must be accurately defined within the lesson.
- f. ***Vary procedures in the lesson.*** Remember that students learn in different ways. Try to provide opportunities for all students to learn the economics taught in the lesson. (See Chapter 3.)
- g. ***Include questions and answers for discussion in the lesson and include them often.*** The teacher is unable to read the writer's mind. If debriefing and discussion are important to effect student learning, be sure to include the critical questions and their answers, specific or suggested. The

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questions asked in the lesson are instrumental to the quality of thinking completed by students. Ask questions at as many levels of Bloom's taxonomy as possible. Frequent question and answer sessions within the lesson help the student to ascertain what is important to remember. These discussions also enhance student learning by making students actively involved.

- h. **Remember the instructional objectives.** When constructing the procedure, keep the lesson objectives in mind. The writer should always check to see if all of the objectives are addressed by the procedure.
- i. **Caveats.** The use of dated examples should be avoided because they limit the lifetime of a lesson. The use of humor should be avoided as well. Much humor has a short shelf life, and some humor might offend students.

9. **Closure.** Consider the following conversation between a parent and child.

Parent: "What did you do at school today?"

Student: "We played a game."

Parent: "What did you learn in the game?"

Student: "I don't know."

When the activities in the procedure section have been completed, it is very important to make sure that students have learned the important points. The closure section provides a means of helping students recognize those points. The lesson may seem to imply the major points of the objectives, but relying on that may not be adequate. (See "Direct Instruction," Chapter 4.) Closure occurs in the mind of the student, not in what the teacher does or thinks. A review of major points, carefully crafted questions, and other closure activities can help students grasp important points and objectives explicitly. Closure provides the teacher with an opportunity to make sure that students have achieved the objectives of the lesson.

10. **Assessment.** Some type of assessment will help the teacher determine whether students have achieved the objectives of the lesson. Assessment will help the teacher determine whether further instruction is necessary. A variety of assessment techniques may be used, such as multiple-choice questions, essay

questions, performance-based assessment, and authentic assessment. See Chapter 5 for more information on this topic.

11. Extension/connection. After the lesson is completed, the teacher may discover that students are eager to learn more about the economics taught. Perhaps the teacher will want to enhance student learning through additional activities that vary from the procedure used in the lesson. Brief recommendations of activities, such as student research reports, should be provided at the end of the lesson. Additionally, the teacher may want to make connections to other subjects that the student has learned. For example, the lesson might recommend that a guest speaker from a community business be invited to discuss the business's specific resources and associated costs of production after students have completed a lesson on that subject. In an elementary school classroom, students may create books by drawing pictures and writing brief descriptions of something they have learned in a lesson, such as the concept of *public goods*. There are many opportunities to enrich student learning through connections to language arts, history, mathematics, science, and other disciplines. See Chapter 2 for more ideas on teaching economics across the curriculum.

Refining the Lesson

As with most writing, the key to writing effective lesson plans is to rewrite, rewrite, and rewrite — more perspiration! Lesson writers usually know what they are trying to accomplish in the lesson. The purpose and approach may be clear in their minds; however, the written lesson may not accurately reflect their intent. As mentioned earlier, a well-written lesson plan will be clear, concise, accurate, thorough, and easy-to-use. Table 7.2 presents a checklist that a lesson writer may use to review the fit between all that was intended and all that has been achieved.

If the answers to the following questions are *yes*, then an effective lesson has probably been developed. The writer, however, should not stop at this point. The lesson should be tested in the classroom by teachers. These teachers can provide feedback to the author about the effectiveness of the lesson and information on specifics, such as sections in the procedure that are unclear, how much time is

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required to teach the lesson, and whether students are able to achieve the objectives. The following chapter provides guidelines on how to conduct a field test.

Table 7.2

Lesson Plan Checklist

1. Does the lesson description state the goals and purposes of the lesson clearly? Will the teacher gain a clear overview of the lesson activities and be encouraged to use the lesson?
2. Are the listed content standards, benchmarks, and economic concepts explicitly taught and fully explained in the lesson?
3. Have the related subject areas that are listed been given meaningful inclusion in the lesson?
4. Are the instructional objectives student-oriented? Observable? Clear and unambiguous? Descriptive of a learning outcome?
5. Is the time required realistic?
6. Are all the required materials listed? Are student worksheets and visuals included in the lesson?
7. Is the procedure clearly explained, step by step?
8. Will the procedure hold the interest of the students?
9. Are the activities in the procedure varied?
10. Is all economic content presented in the lesson accurate and fully explained?
11. Are discussion questions written at various levels of Bloom's taxonomy? Are answers included?
12. Does the procedure provide the necessary tools for students to accomplish the objectives?
13. Will students be able to achieve closure?
14. Will teachers be able to assess whether their students have learned the objectives?
15. Are methods for enrichment or reinforcement provided?

Conclusion

Although lesson writing basics may not be as exciting as developing creative and inventive methods of teaching economics, they are critical to writing a lesson that may be shared easily with many teachers. By keeping these basics in mind, the writer greatly enhances the instructional effectiveness of the lesson she or he produces and increases the likelihood that the lesson will be adopted by others. Inspiration is desirable, but perspiration is mandatory.

Chapter 8

FLIGHT TESTING LESSONS

Why Flight Test Your Lesson?

Successful lesson writing is a complex craft. This is not widely recognized. Few people know of the pitfalls that await. Here are some of them.

1. Successful lessons have a format or design that is appealing to students and teachers. But how will teachers and students respond to the design of any given lesson? Even experienced lesson writers are never sure.
2. Successful lessons provide classroom teachers with worthwhile economics content. There is a great deal of economics to be taught. But all economics content is not of equal importance for a given set of students. Lesson writers must decide what is most important for students to know and when they should know it.
3. Successful lessons provide teachers with adequate directions for teaching the lesson. Directions lacking adequate details leave teachers with insufficient direction and reduce teachers' confidence.
4. Successful lessons provide students with materials that are accessible and engaging, thus helping them reach higher levels of economic understanding and skill. If the materials are too easy, students become bored. But if the materials are too complicated, the students become confused.

Will your lessons "fly" in the classroom? How can you gain assurance that the lessons you have written will work? One way is by setting up an adequate "flight test" for the new lessons. This chapter suggests several steps you might take to get off the ground.

Content and Pedagogy Reviews

Once your lessons have been developed, they are ready for review by people with expertise in economics and in teaching. Send the complete manuscript to economists or others who have expertise in economics and ask them to alert you

to any errors they see in the content. In addition, send the manuscript to pedagogical experts. Ask them to evaluate the teaching strategies used.

Before the Field Test

Field testing is small-scale testing of the lessons you have developed. It can be highly structured or less structured, depending on your goals.

Recruiting teachers for field testing. Use care in selecting teachers to field test the lessons. Most projects have multiple purposes. Not only do you wish to gather feedback about the strengths and weaknesses of the materials; you are also developing support for more widespread use of those materials and you are identifying teachers who may help in training other teachers to use them.

There are two main ways to involve teachers in the field test. The first and easiest is simply to invite teachers from your immediate area to help field test the curriculum. Second, you may wish to contact teachers who teach in other parts of your region. Government agencies, professional associations, and universities with teacher training programs may be able to help in providing the names of teachers or schools from which you can recruit teachers.

Organizing teacher feedback. The field-test teachers should understand how they are to provide feedback to you. A common practice is to ask the teachers to complete an overall rating of the lesson, noting any obvious strengths and weaknesses. (A sample is at the end of this chapter.) Furthermore, invite the teachers to write comments directly on the curriculum manuscript. They might explain how they rephrased questions or how students responded to particular parts of the lessons. You also might ask the teachers to provide you with samples of student work.

During the Field Test

Teachers should implement the lessons in their classrooms according to the directions you have provided. The teachers should know how to reach you if questions arise. Field testing is rarely perfect. Materials are misplaced.

Schedules are interrupted. Communications are not clear. Expect to make adjustments to fit the actual conditions encountered in the classrooms.

After the Field Test

Following the field test, the teachers should complete all the forms and return them to you. You will receive at least three types of feedback from your reviewers and field-test teachers. First, they will make suggestions that may improve the lessons but will call for substantial changes. Some reviewers and field testers will call for significant format changes and completely new lessons to be developed. You must decide whether the additional benefits of substantial changes are worth the additional costs. Second, reviewers and field-test teachers will make simple, technical points which can be incorporated easily. Rewording questions, adding directions, correcting misspellings are critical for improving the quality of your lessons. Details are very important. Finally, some reviewers and field-test teachers will make suggestions that are simply unusable or impractical. You will have to judge what is useful and what is not. You cannot please everyone.

If it is feasible, consider setting up a face-to-face meeting with the field-test teachers. Interview the teachers regarding each lesson, asking them to comment candidly on the strengths and weaknesses. This debriefing session enables the teachers to express their reactions to the materials in a broader context. Often, themes for improvement emerge — that the lessons were consistently too difficult for the students or that the lessons took much more time than the writers had anticipated. Hearing such reports firsthand also helps writers assess how much confidence they can have in the field-tested lessons. If, for example, the teachers had great success with the lessons, this signals that few big changes are necessary despite calls for change that you might hear from other reviewers. Classroom success is hard to argue with. Conversely, classroom failure is hard to accept. If the field-test teachers had negative experiences, large changes may

FLIGHT TESTING LESSONS

be necessary. Pay attention to what the teachers tell you. Do not disregard their concerns.

If there are several writers, write a summary of the field-test results for the lesson writers. (A sample is at the end of the chapter.) Describe the overall strengths and weaknesses of the lessons. Provide the writers with the overall ratings of the lessons and the specific suggestions for change. Also, consider providing the writers with as much of the actual field-test data as possible. Writers often welcome the chance to examine the actual manuscripts the teachers used and the surveys they completed. Most important, direct the writers to the changes that are most important to make. Let them know what feedback needs to be taken seriously and what can be disregarded.

Conclusion

If a lesson isn't successful in the classroom, it is of little value — no matter how well-written or creative it is. Field testing lessons is the best way to determine how well they work in classrooms. Feedback from practitioners enables lesson writers to improve their lessons.

Lesson Review Sheet

Lesson Title _____

Name of Reviewer _____

Course Taught _____

Age Level of Students _____

Amount of Class Time Required _____

1. Rate the overall quality of the economics content in the lesson.

Poor

Excellent

1

2

3

4

5

2. Rate the overall quality of the pedagogy in the lesson.

Poor

Excellent

1

2

3

4

5

3. What were the strengths of the economics content in the lesson?

A. Teacher directions

B. Student materials

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2. What were the weaknesses of the economics content in the lesson?

A. Teacher directions

B. Student materials

3. In what ways can the economics content of the lesson be improved?

4. What were the strengths of the pedagogy in the lesson?

A. Teacher directions

B. Student materials

5. What were the weaknesses of the pedagogy in the lesson?

A. Teacher directions

B. Student materials

6. In what ways can the pedagogy of the lesson be improved?

A Sample Field Test Report***Stock Market Game Field-Test Report***

April, 1996 The *Stock Market Game (SMG)* field testing was conducted from February 17 through April 2. All lessons were taught. The teachers were asked to rate each lesson on a 1-5 scale, with 1 being poor and 5 being excellent. They were asked to identify the strengths and weaknesses of the lessons and to write comments directly on the manuscript. The lessons mailed to the writers and reviewers are one edit ahead of the lessons used in the field testing.

Field-Test Teachers

Steven Carlovsky
Salem Lutheran School

Jill Koebernik
Milwaukee High School for the Arts
Milwaukee Public Schools

Jennifer J. Fontanini
Wauwatosa East High School
Wauwatosa School District

Stephanie D. Todd
Hartford Avenue School
Milwaukee Public Schools

Teri Grober
Cudahy Middle School
Cudahy School District

General comments

Overall, the teachers liked the lessons very much. They did not want to give up the materials unless they were assured that they would receive copies when the materials were published. They commented favorably on the variety of the lessons. They thought that the lessons integrated the content very well. The teachers enjoyed the writing activities. Several of these teachers routinely do journal writing with their students. The students generally found the lessons to be engaging. The math activities usually worked well.

FLIGHT TESTING LESSONS

The most common complaint was that the time estimates were too conservative. The lessons took more time than the estimates suggested. Some activities were overloaded and lacked definitions for students. Some lessons worked better than others with younger students. The teachers discussed ways to highlight the integrated nature of the materials but did not arrive at a consensus. The suggestion to place the cross-curriculum skills section in a box was favorably received, but there was also interest in having some kind of notation by each procedure or activity or visual.

Lesson 1 Why Study the Stock Market?

Rating: 4.5

This lesson is a very good way to start. The students loved reading Uncle Mort's Money. The lesson took longer than estimated. The math material was too hard for elementary school students. Perhaps the students should be asked to use a calculator. The lesson needs a simple definition of inflation, maybe an inflation demonstration? Could one more example about savings and investment be included so the main point is reinforced?

Lesson 2 What is a Corporation?

Rating: 5

The students liked the paper clip activity for developing graphing skills. The students really got into the roles. Can the visuals somehow be condensed? Consider having each group explain their recommendations at the board. The students had a little trouble with Clients 4 and 9, and the essay writing was a little hard.

Lesson 3 What is a Stock Market?

Rating: 4.5

The McDonald's example works well. All the students know about McDonald's. Add a question on profit and maybe have kids check the newspaper to see how McDonald's stock is doing on given days.

Lesson 4 What are Markets?

Rating: 5

This was an interesting activity for the students. Perhaps the lesson should open by posing the question: How have you participated in markets this week? This drives home the point that markets are wherever buyers and sellers meet.

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Increase the number of push-ups. Start at 30 push-ups for 1 extra-credit point. The students did not get questions 6 and 7 in procedure I. The Market Economy visual needs more explanation. Could some phrases be included under each main point of the visual?

Lesson 5 What is the Stock Market and How is a Stock Traded? Rating 4.5

The students loved the play. This lesson takes two days. How about including actual buy and sell forms so the kids can see what they look like and use them in the play? The vocabulary slowed the lesson down — it took one day just to go over the terminology. There is too much material in one lesson.

Lesson 6 How Are Prices Determined?

Rating 3

The market simulation is great, but change the name of "Some Company." This distracted the students. The students never bought the "renting my brother's car" idea. They had trouble pretending it was a serious example so they never really got the main point of the lesson. Some kind of labor activity might be better — students washing cars for scouts? Students opening a summer baby sitting service? Be sure to tell teachers to color code the cards in the simulation. Be sure to have students assigned as a recorder and a card keeper. The lesson has too much terminology. The information on Activity 7 ("How to Balance a Market") was confusing even for high school students. Provide a visual that has the closure summary on it. In fact, this should be done in many of the lessons.

Lesson 7 How to Read Stock Tables

Rating 4

Are the stock symbols here the same as in the *SMG* manual? There is a math mistake on point 6 in Activity 1 — students should divide instead of multiply. Question 6 in Activity 3 might use the same companies as used in question 3. Students liked the scavenger hunt. Add more math — more examples of figuring daily volume, buying shares, changing fractions into decimals.

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Appendix A

VOLUNTARY NATIONAL CONTENT STANDARDS IN ECONOMICS

Students will understand that:

1. Productive resources are limited. Therefore, people cannot have all the goods and services they want; as a result, they must choose some things and give up others.
2. Effective decision making requires comparing the additional cost of alternatives with the additional benefits. Most choices involve doing a little more or a little less of something: few choices are all or nothing decisions.
3. Different methods can be used to allocate goods and services. People, acting individually or collectively through government, must choose which methods to use to allocate different kinds of goods and services.
4. People respond predictably to positive and negative incentives.
5. Voluntary exchange occurs only when all participating parties expect to gain. This is true for trade among individuals or organizations within a nation, and among individuals or organizations in different nations.
6. When individuals, regions, and nations specialize in what they can produce at the lowest cost and then trade with others, both production and consumption increase.
7. Markets exist when buyers and sellers interact. This interaction determines market prices and thereby allocates scarce goods and services.

Students will be able to use this knowledge to:

Identify what they gain and what they give up when they make choices.

Make effective decisions as consumers, producers, savers, investors, and citizens.

Evaluate different methods of allocating goods and services, by comparing the benefits and costs of each method.

Identify incentives that affect people's behavior and explain how incentives affect their own behavior.

Negotiate exchanges and identify the gains to themselves and others. Compare the benefits and costs of policies that alter trade barriers between nations, such as tariffs and quotas.

Explain how they can benefit themselves and others by developing special skills and strengths.

Identify markets in which they have participated as a buyer and a seller and describe how the interaction of all buyers and sellers influences prices. Also, predict how prices change when there is either a shortage or surplus of the product available.

VOLUNTARY NATIONAL CONTENT STANDARDS IN ECONOMICS

Students will understand that:	Students will be able to use this knowledge to:
8. Prices send signals and provide incentives to buyers and sellers. When supply or demand change, market prices adjust, affecting incentives.	Predict how prices change when the number of buyers or sellers in a market changes, and explain how the incentives facing individual buyers and sellers are affected.
9. Competition among sellers lowers costs and prices, and encourages producers to produce more of what consumers are willing and able to buy. Competition among buyers increases prices and allocates goods and services to those people who are willing and able to pay the most for them.	Explain how changes in the level of competition in different markets can affect price and output levels.
10. Institutions evolve in market economies to help individuals and groups accomplish their goals. Banks, labor unions, corporations, legal systems, and not-for-profit organizations are examples of important institutions. A different kind of institution, clearly defined and well-enforced property rights, is essential to a market economy.	Describe the roles of various economic institutions.
11. Money makes it easier to trade, borrow, save, invest, and compare the value of goods and services.	Explain how their lives would be more difficult in a world with no money, or in a world where money sharply lost its value.
12. Interest rates, adjusted for inflation, rise and fall to balance the amount saved with the amount borrowed, thus affecting the allocation of scarce resources between present and future uses.	Explain situations in which they pay or receive interest, and explain how they would react to changes in interest rates if they were making or receiving interest payments.
13. Income for most people is determined by the market value of the productive resources they sell. What workers earn depends, primarily, on the market value of what they produce and how productive they are.	Predict future earnings based on their current plans for education, training, and career options.
14. Entrepreneurs are people who take the risks of organizing productive resources to make goods and services. Profit is an important incentive that leads entrepreneurs to accept the risks of business failure.	Identify the risks, returns, and other characteristics of entrepreneurship that bear on its attractiveness as a career.

VOLUNTARY NATIONAL CONTENT STANDARDS IN ECONOMICS

Students will understand that:

15. Investment in factories, machinery, new technology, and the health, education, and training of people can raise future standards of living.
16. There is an economic role for government to play in a market economy whenever the benefits of a government policy outweigh its costs. Governments often provide for national defense, address environmental concerns, define and protect property rights, and attempt to make markets more competitive. Most government policies also redistribute income.
17. Costs of government policies may sometimes exceed benefits. This may occur because of incentives facing voters, government officials, and government employees, because of actions by special interest groups that can impose costs on the general public, or because social goals other than economic efficiency are being pursued.
18. A nation's overall levels of income, employment, and prices are determined by the interaction of spending and production decisions made by all households, firms, government agencies and others in the economy.
19. Unemployment imposes costs on individuals and nations. Unexpected inflation imposes costs on many people and benefits some others because it arbitrarily redistributes purchasing power. Inflation can reduce the rate of growth of national living standards because individuals and organizations use resources to protect themselves against the uncertainty of future prices.
20. Federal government budgetary policy and the Federal Reserve System's monetary policy influence the overall levels of employment, output, and prices.

Students will be able to use this knowledge to:

- Predict the consequences of investment decisions made by individuals, businesses, and governments.
- Identify and evaluate the benefits and costs of alternative public policies, and assess who enjoys the benefits and who bears the costs.
- Identify some public policies that may cost more than the benefits they generate, and assess who enjoys the benefits and who bears the costs.
- Interpret media reports about current economic conditions and explain how these conditions can influence decisions made by consumers, producers, and government policy makers.
- Make informed decision by anticipating the consequences of inflation and unemployment.
- Anticipate the impact of the federal government's and the Federal Reserve System's macroeconomic policy decisions on themselves and others.

Source: National Council on Economic Education. (1997). *Voluntary national content standards in economics*. New York: Author.

Appendix B

Voluntary National Standards in Economics

Content Standard 3 with Benchmarks

Students will understand that:	Students will be able to use this knowledge to:
<i>Different methods can be used to allocate goods and services. People, acting individually or collectively through government, must choose which methods to use to allocate different kinds of goods and services.</i>	Evaluate different methods of allocating goods and services, by comparing the benefits and costs of each method.

Individuals and organizations routinely use different decision-making systems to determine what should be produced, how it should be produced, and who will consume it. Most high school students already understand the major advantages and disadvantages of selling concert tickets using a first-come-first-served system, rather than a lottery, to select from among those who applied for tickets. Unfortunately, many students have experienced the use of force to allocate resources on the school playground. Students also know that families typically use authoritarian systems to decide how resources are used. Mom and/or Dad decide.

The American economy uses a market system to make many allocation decisions, and it is important for students to understand why the market system is used so extensively. Students also should be able to compare the characteristics of a market system with alternatives used more extensively in some other countries. With this understanding, students can assess the benefits and costs of alternative allocation systems when discussing difficult questions such as how incomes should be divided among people, or who should receive a kidney transplant and who should not.

BENCHMARKS

At the completion of Grade 4, students will know that:	At the completion of Grade 4, students will use this knowledge to:
1. No method of distributing goods and services can satisfy all wants. 2. There are different ways to distribute goods and services (by prices, command, majority rule, contests, force, first-come-first-served, sharing equally, lottery, personal characteristics, and others), and there are advantages and disadvantages to each.	1. Generate different methods of allocating student time on classroom computers, tell who gains and who loses with each distribution method, and conclude that no distribution method satisfies all wants. 2. Compare the advantages and disadvantages of different methods of allocating various goods and services, such as cookies, houses, student time on playground equipment at recess, elective class offices, military service in times of war or peace, and athletic championships.

CONTENT STANDARD 3 WITH BENCHMARKS

At the completion of **Grade 8**, students will know the Grade 4 benchmarks for this standard, and also that:

At the completion of **Grade 8**, students will use this knowledge to:

1. Scarcity requires the use of some distribution method, whether the method is selected explicitly or not.
 2. There are essential differences between a market economy, in which allocations result from individuals making decisions as buyers and sellers, and a command economy, in which resources are allocated according to central authority.
 3. People in all economies must address three basic questions: What goods and services will be produced? How will these goods and services be produced? Who will consume them?
 4. National economies vary in the extent to which they rely on government directives (central planning) and signals from private markets to allocate scarce goods, services, and productive resources.
 5. As consumers, people can use resources in different ways to satisfy different wants. Productive resources can be used in different ways to produce different goods and services.
1. Describe the distribution methods used to allocate a variety of goods and services, such as parking spaces, prison paroles, access to a new drug treatment for cancer, seats on a bus, milk, and tickets to a popular art exhibit. Then explain why a distribution method is necessary.
 2. Compare the methods used to allocate work responsibilities in homes with those used to allocate work responsibilities in businesses. Also, compare the advantages and disadvantages of economic systems used in different countries and at different times, using as criteria broad social goals such as freedom, efficiency, fairness, and growth.
 3. Answer the three economic questions while producing a simple classroom product, such as yarn bracelets, greeting cards, or decorations for a school dance.
 4. Compare the relative size and responsibilities of government in several countries.
 5. List the resources used to produce some item and identify other items that could have been made from these resources.

CONTENT STANDARD 3 WITH BENCHMARKS

At the completion of **Grade 12**, students will know the Grade 4 and 8 benchmarks for this standard, and also that:

At the completion of **Grade 12**, students will use this knowledge to:

1. Comparing the benefits and costs of different allocation methods in order to choose the method that is most appropriate for some specific problem can result in more effective allocations, and a more effective overall allocation system.
1. Examine economic systems used in different countries, select the one that provides the most effective method for allocating resources, and explain why this method is effective. Also, assess the effectiveness of various systems for allocating organ transplants, hunting and fishing licenses, elective offices, time with a parent, and access to hospital maternity facilities.

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1140 Avenue of the Americas
New York, NY 10036